

EQUITY RESEARCH

June 27, 2023

Company Update

THOMSON REUTERS CORPORATION

The Case For Casetext

Our Conclusion

TRI furthered its push to incorporate generative AI into its product suite with the \$650 million acquisition of Casetext. Paying \$650 million for a business that will contribute little near-term revenue is both a significant show of support in the transformative potential of generative AI and indicative of the very hot market for businesses working with the nascent technology. With limited information on the financial profile of Casetext, we focus our analysis more closely on the strategic rationale behind the deal and how Casetext and its core CoCounsel product could impact TRI's business. We have identified a number of areas of potential upside that could result from the combination and see the deal as a positive sign that TRI is being appropriately proactive in response to a technology with true disruptive potential. Given its position as an incumbent with strong market share and a solid balance sheet, we have a favourable view on management's approach to build, partner and buy in an effort to boost TRI's generative AI capabilities.

Key Points

How TRI Can Create Value With Casetext: We see four primary areas in which the combination of CoCounsel and TRI's products can lead to upside. 1) Accelerating adoption of generative AI in the legal market; 2) Improving CoCounsel with TRI's proprietary content; 3) Expanding the TAM for TRI's workflow product and Casetext's core CoCounsel offering; 4) Expanding CoCounsel into TRI's Tax, Accounting and Risk, Fraud and Compliance customer bases.

A Balanced Build, Partner, Buy Approach: The acquisition of Casetext is the third leg of TRI's Build, Partner, Buy generative AI strategy. TRI has been proactive in adopting and developing generative AI within its product suite through a commitment to building internally (\$100 million in annual spending), partnering with leading firms (Microsoft Copilot partnership), and now through the acquisition of Casetext. The mixed approach to integrating generative AI should help TRI keep a clear view of an evolving market and allow it to pursue partnership and acquisition opportunities in areas where speed and time to market are critical.

Valuation Creation Will Take Time: At a price tag of \$650 million, the Casetext acquisition is emblematic of the lofty valuations in the AI space. While management declined to provide any financial details on Casetext until the deal officially closes, we do not expect the business to make a significant contribution on the revenue front and expect the deal to be margin dilutive through 2024. Given the lack of financial contribution, it will likely be years before TRI's return on its investment can reasonably be evaluated. In order for the deal to be successful over the longer term, TRI will need to effectively sell CoCounsel into its install base, integrate the technology into its workflow products, and win additional market share with improved product quality.

All figures in US dollars unless otherwise stated.

Please see "Price Target Calculation and Key Risks to Price Target" information on page 7. For required regulatory disclosures please refer to "Important Disclosures" beginning on page 8.

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

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

Erin Kyle, CPA
+1 416-313-9851
Erin.Kyle@cibc.com

Sam Schmidt, CPA
+1 416-980-5448
sam.schmidt@cibc.com

Outperformer

TRI-NYSE, Sector: Industrials

Current Price (6/27/23): US\$138.13

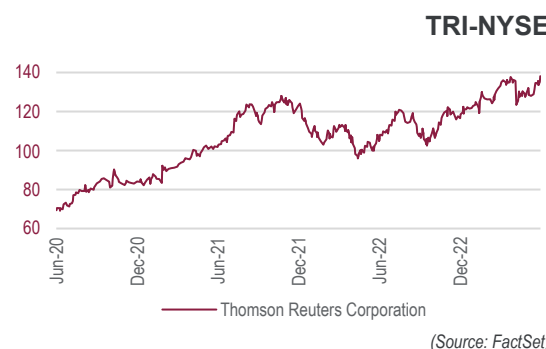
Price Target (12-18 mos.): US\$140.00

CIBC Estimates and Valuation

(Dec. 31)	2021	2022	2023	2024
Adj. EPS	1.95 A	2.56 A	3.29 E	3.92 E
Adj. EBITDA(min)	1,970.0 A	2,329.0 A	2,642.9 E	2,885.0 E
Adj. EPS	Q1	Q2	Q3	Q4
2023	0.82 A	0.77 E	0.78 E	0.96 E
2022	0.66 A	0.60 A	0.57 A	0.73 A
Adj. EBITDA(min)	Q1	Q2	Q3	Q4
2023	677.0 A	633.7 E	615.0 E	717.3 E
2022	600.0 A	561.0 A	535.0 A	633.0 A
Valuation	2021	2022	2023	2024
P/E	70.8x	54.1x	42.0x	35.2x
EV/EBITDA	30.8x	26.1x	23.0x	21.0x

Stock Performance and Key Indicators

Avg. Dly. Vol.:	401K	Shares O/S:	453.5M
Market Cap.:	US\$62,642M	Float:	152.0M
52-wk Range:	US\$102.68 - US\$138.13	Div. / Yield:	US\$1.78/1.29%



Thomson Reuters Corporation (TRI-NYSE) — Outperformer

Price (6/27/23) US\$138.13 12-18 mo. Price Target US\$140.00

Sector: Industrials

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

Peer Comparison	2021	2022	2023E	2024E
P/E - TRI	-	52.9x	41.1x	34.5x
P/E - Information Services Peers	-	28.8x	27.5x	24.0x
EV/EBITDA - TRI	-	24.4x	21.5x	19.7x
EV/EBITDA - Information Services	-	24.9x	23.0x	20.6x
Key Financial Metrics	2021	2022	2023E	2024E
Effective Tax Rate	129%	11%	21%	15%
Net Debt	3,008	3,692	2,079	(335)
Net Debt/EBITDA	1.6x	1.7x	0.9x	(0.0x)
Free Cash Flow	1,256	1,340	1,862	2,119
Per Share Data	2021	2022	2023E	2024E
FCFPS	2.54	2.76	4.11	4.67
Diluted EPS	11.50	2.88	4.00	3.69
Adj. EPS Dil.	1.95	2.56	3.29	3.92
FD Number of Shares	494.5	484.9	453.5	453.5
Dividends per Share	1.57	1.73	1.99	2.16
Income Statement	2021	2022	2023E	2024E
Revenue	6,348	6,627	6,818	7,245
Tot Operating Exp	4,370	4,280	4,188	4,360
Adj. EBITDA	1,970	2,329	2,643	2,885
Adj EBITDA Margin	31.0%	35.1%	38.8%	39.8%
D&A	651	625	597	573
EBIT	1,242	1,834	1,932	2,179
Pretax profit	1,054	2,082	1,648	1,993
Net Income	5,689	1,402	1,815	1,673
Cash Flow Statement	2021	2022	2023E	2024E
Net CFO	1,773	1,915	2,395	2,613
Capex	487	595	506	453
Acquisit & Invest	18	191	490	0
Net CFI	(504)	(462)	3,282	900
Dividends Paid	775	837	901	979
Net CFF	(2,273)	(1,156)	(4,411)	(1,099)
Net Cash Flow	(1,009)	291	1,267	2,414
Free Cash Flow	1,256	1,340	1,862	2,119
Balance Sheet	2021	2022	2023E	2024E
Cash & ST Investment	778	1,069	2,336	4,750
Total Current Assets	2,453	2,811	4,008	6,422
Net PP&E	1,324	1,336	1,256	1,136
Intangible Assets	3,331	3,219	3,140	3,007
Goodwill	5,940	5,882	5,864	5,864
Total Assets	22,149	21,711	19,460	20,216
Tot Curr Liab	2,581	4,891	4,186	4,367
LT Int-Bearing Debt	3,786	3,114	3,116	3,116
Total Liabilities	8,315	9,762	8,910	8,971
Shareholders' Equity	13,834	11,949	10,550	11,245
Tot Liab & SE	22,149	21,711	19,460	20,216

Source: Company reports, FactSet and CIBC World Markets Inc.

Company Profile

Thomson Reuters is one of the world's largest providers of intelligent information services, ranking first or second in share in most major markets covered. Key end markets include Legal, and Tax & Accounting.

Investment Thesis

We expect the evolution of TRI's story to provide another leg of organic growth and EBITDA expansion as the company streamlines its operation to focus on growth initiatives and equips its customers with best-in-class software solutions. Given a large recurring revenue base, stable end market, and multiple levers to realize organic growth, we believe TRI should be a core investment holding, particularly in an uncertain economic environment.

Price Target (Base Case): US\$140.00

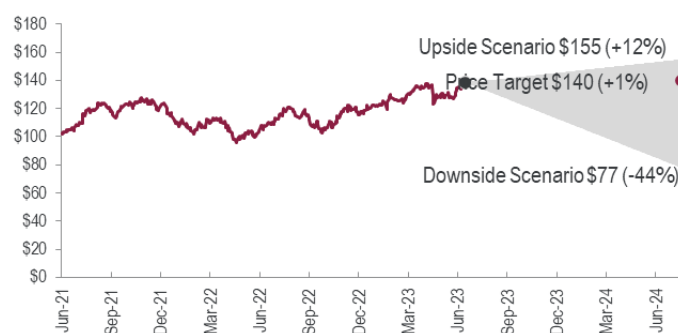
Our base case price target is based on our EV/EBITDA valuation where we apply a 22.5x EBITDA multiple to TRI's core Legal, Tax & Accounting, and Corporates segments, a 7.5x multiple to value Global Print and Reuters News and back out normalized corporate costs using a 20.9x multiple. We also carry TRI's stake in LSEG at mark-to-market value.

Upside Scenario: US\$155.00

In this scenario, we assume organic growth of 9% and a 25x EV/EBITDA multiple on the Big 3 segments coupled with higher consolidated EBITDA margins.

Downside Scenario: US\$77.00

In this scenario, we assume a reduction in peer multiples that results in a 15.0x EV/EBITDA multiple on the Big 3 segments. In addition, we assume a step back in Big 3 organic growth to 2% and an erosion in Big 3 EBITDA margins.



Casetext Product Capabilities

While Casetext has operated in the legal technology space for over 10 years, its current focus on Generative-AI is the result of a strategic pivot made within the last twelve months. After being provided with early access to OpenAI's Chat GPT-4 model in fall 2022, Casetext began developing CoCounsel, a conversational AI assistant designed to improve the productivity and efficiency of legal professionals. Unlike the broadly available Chat GPT, CoCounsel has been designed to only provide answers that can be sourced from Casetext's database of case law, statutes, regulations, and codes. In the legal field where correctly sourced information is extremely important, eliminating Chat GPT's 'hallucinations' or fabricated answers is critical.

CoCounsel currently has eight 'skills' or capabilities, and a brief summary of those capabilities is included below in Exhibit 1. Of those skills, six go beyond TRI's core research functionality and are likely to help TRI accelerate its goal of using generative AI to better integrate its research and workflow products. The skills outlined in blue are skills used for legal research functions, while the black outlined skills are workflow solutions that represent market expansion opportunities for Thomson Reuters.

Exhibit 1: TRI - CoCounsel's 'Skills'

Review Documents	Reads documents and locates relevant information to respond to question prompts. Searches through documents to locate key information during discovery and due diligence.
Deposition Preparation	Identifies relevant topics to address and drafts pointed questions on each topic based on information about deponents.
Summarize	Summarizes key information from any type of document to help review and interpret lengthy information faster.
Contract Analysis	Pulls answers and complete lists of relevant clauses from contract sets to accurately track deal terms.
Contract Policy Compliance	Identifies all clauses within a contract set that do not comply with relevant policies. Reports the risks of using non-compliant language and recommends revisions.
Market Check	Identifies trending terms within contract databases to be used in drafting, negotiations, and redlining.
Search a Database*	Searches documents and reads relevant results to answer question prompts, including case information, deals, and contract language from customers' own databases.
Legal Research Memo*	Retrieves relevant resources and provides answers (with explanation and supporting sources) to research question prompts.

Source: Company website and CIBC World Markets Inc.

Strategic Rationale

With limited financial information available and low expectations for the amount of revenue Casetext is currently generating, our analysis is mostly constrained to the strategic importance of the acquisition. TRI has looked to capitalize on the Generative AI boom by pursuing a *Build, Partner, Buy* strategy, and with this deal has now taken notable steps on all three prongs of the strategy. The *build* portion of strategy relates to TRI's commitment to improve its core legal research products with Generative AI capabilities with \$100 million in

annual investment. The *partner* portion of strategy is highlighted by the recent partnership announcement with Microsoft to create a legal drafting tool by integrating Westlaw and Practical Law into Microsoft Word with Microsoft's generative AI Copilot.

We do view the combination of CoCounsel and Thomson Reuters as a clear fit, with four key areas where the acquisition should create additional value to Thomson Reuters:

1) Accelerating AI Adoption: The real value is being early to market in an area as potentially transformational as Generative AI. Casetext's own story is evidence of this, as early access to Chat GPT-4 allowed it to create a marketable product before the rest of the market, something TRI was willing to pay a premium price for. TRI is likely looking to repeat this pattern at a larger scale, paying a premium price to accelerate its generative AI capabilities while also keeping the technology away from larger scale competitors, LexisNexis in particular. The access to additional AI talent is another important consideration with the acquisition, as Casetext adds a team of AI professionals with experience in the legal market, allowing the current team to focus on generative AI enhancements to Westlaw and Practical Law.

2) Improving CoCounsel With TRI's Proprietary Content: Given the publicly available nature of Chat-GPT and its willingness to provide factually incorrect or fabricated answers, we believe that value creation in the legal market will come from the combination of LLMs and proprietary content/data. Accuracy is essential in a legal context and CoCounsel has gained traction by eliminating the risk of an incorrect answer. Adding TRI's content database will provide CoCounsel with a more extensive knowledge base and should make the tool significantly more effective.

3) Expanding The TAM: We expect the Casetext acquisition to lead to an expanded market size for both TRI's existing legal products and the CoCounsel product. With six of CoCounsel's 'skills' focused outside of research, there is an opportunity for TRI to improve its workflow products by better leveraging research content in areas such as document review and contract analysis. We also see potential for the acquisition to accelerate CoCounsel's revenue growth by leveraging TRI's sales infrastructure and moving upmarket into larger law firms and enterprise corporate customers. Casetext has gained traction at the smaller end of the market, and selling into TRI's sticky install base of larger firms is likely to help accelerate revenue growth.

4) Expanding CoCounsel Into TRI's Other Key Areas (TAP, RFC): CoCounsel was purpose built for legal professionals, but TRI believes that the technology can be adapted relatively quickly to serve TRI's tax, accounting and risk, fraud and compliance (RFC) customers. Professionals in those fields also require accurate information from large databases and CoCounsel's chat-based search and workflow tools could be repurposed and sold into those customer bases.

AI-based Legal Start-ups

In Exhibit 2, we summarize fundraising information of other start-ups offering AI-powered legal solutions. Given the increased interest in generative AI in the legal space, start-ups have been quick to raise capital from venture capital backers and many are leveraging OpenAI's GPT LLM as a backbone for their technologies.

Exhibit 2: AI-based Legal Start-ups

		Models Used*	Founded	Capital Raised	Team Size	Notable Backers
Casetext	Branded as the world's first reliable AI legal assistant, Casetext's CoCounsel leverages AI to assist with document review, deposition preparation, database search, research, and contract analysis.	OpenAI GPT	2013	\$60MM+	50	Y Combinator
Harvey AI	Harvey AI provides lawyers with a natural language interface for their existing legal workflows using LLMs and can assist with editing, research, and contract analysis. Harvey builds custom LLMs for elite law firms to tackle the most complex legal challenges.	OpenAI GPT	2022	\$26MM+	N/A	OpenAI Startup Fund, Sequoia
Robin AI	Robin AI's Review platform combines proprietary machine learning software and LLMs to draft and review contracts. Its Contract Copilot uses LLMs to assist with drafting, reviewing, and searching information.	OpenAI GPT	2019	\$13MM+	N/A	Google, Forward Partners, Plural, Episode 1
EvenUp	EvenUp turns medical documents and case files into AI-driven demand packages for injury lawyers, using generative AI and a proprietary legal dataset.	N/A	2019	\$65MM	N/A	NFX, Bessemer Venture Partners, DCM Ventures, Clio Ventures, Bain Capital Ventures
Darrow AI	Darrow's AI-powered Justice Intelligence Platform scans real-world data to detect harmful events, determine the number of victims, predict the legislative outcome, and assess the financial value of a case.	N/A	2020	\$20MM+	95	Y Combinator, Entrée Capital, F2, NFX
Klarity	Klarity provides full automation document review for various industries. Initially, the software was targeted towards law firms, but more recently focused on enterprise customers for various types of documents.	OpenAI GPT	2017	\$18MM+	N/A	Tola Capital, Picus Capital

Note: Other models may be used as well, but are not disclosed. Information marked N/A is not publicly available.

Source: Company reports and CIBC World Markets Inc.

Environmental, Social and Governance (ESG) Metrics for TRI-NYSE

CIBC ESG Metrics

Governance Metrics	2017	2018	2019	2020	2021
Insider Ownership	60.7%	65.7%	65.8%	67%	68%
Board Gender Diversity	18.2%	18.2%	16.7%	20%	38%
Separation of Chair & CEO	YES	YES	YES	YES	YES
Dual-class Ownership?	YES	YES	YES	YES	YES
Disclose ESG Data?	YES	YES	YES	YES	YES
Social Metrics	2017	2018	2019	2020	2021
CEO Comp./Mkt Cap*	\$0.5	\$0.6	\$0.4	\$0.3	\$0.2
Diversity Targets	NO	NO	NO	NO	YES
Women Managers	39%	40%	43%	43%	41%
Environmental Metrics	2017	2018	2019	2020	2021
Emissions Intensity**	50	18	16	12	12
Net-zero Targets?	NO	NO	NO	YES	YES

*CEO Compensation is shown as per thousand dollars of market capitalization

**Emissions Intensity calculated as total emitted CO2e divided by million \$ of CAD revenue

Sustainalytics ESG Risk Rating

8.8 -0.4 Negligible Risk

Updated on
Jun 3, 2023

Momentum



Sustainalytics ESG Risk Rating Ranking

UNIVERSE	RANK	PERCENTILE
	(1 st = lowest risk)	(1 st = lowest risk)
Global Universe	123/15361	2nd
Media INDUSTRY	4/287	2nd
Publishing SUBINDUSTRY	4/60	6th

Sustainalytics Material ESG Issues

These are the Material ESG Issues driving the ESG Risk Report

Issue Name	ESG Risk Exposure Score Category	ESG Risk Management Score Category	ESG Risk Rating Score Category	Contribution to ESG Risk Rating
Corporate Governance	9.0 High	55.7 Strong	4.0 Low	45.5%
Human Capital	1.9 Low	53.4 Strong	0.9 Negligible	10.7%
Product Governance	1.9 Low	63.8 Strong	0.7 Negligible	7.9%
Business Ethics	4.8 Medium	56.3 Strong	2.2 Low	25.2%
Data Privacy and Security	1.9 Low	63.0 Strong	0.9 Negligible	10.8%
Overall	19.4 Low	57.0 Strong	8.8 Negligible	100%

CIBC Quantitative Scorecard

Within Sector			Within S&P/TSX Comp.		
Style	Rank	Delta	Style	Rank	Delta
Value	23	-2	Value	191	-7
Momentum	16	-11	Momentum	74	-37
Quality	16	+1	Quality	109	+12
Market	3	0	Market	28	+1
Low Volatility	2	+1	Low Volatility	18	-1
Growth	11	-1	Growth	70	+7

Note: Ranking out of 27 stocks

Note: Ranking out of 231 stocks

General Notes Behind the Quantitative Scorecard

Delta refers to the change in the ranking over the past month. Number of stocks "Within Sector" is defined by the number within the GICS. In the "Within S&P/TSX" category, we use all stocks in the S&P/TSX Composite. For detail on the Quant Factors included in each style above, please contact the CIBC Portfolio Strategy Team.

The table above is based upon quantitative, statistical, and mathematical analysis and is not intended to serve as a fundamental recommendation.

CIBC Technical Scorecard

Factor	TSM Score	Factor	TSM Score
TSM	4	Momentum	B
Beta	0.61	MACD	A
Volatility	↓	Alpha (Sector)	B
Trend	↑	Alpha (Index)	B
RSI	Neutral		

General Notes Behind the Technical Scorecard

TSM: The Trendspotting Matrix uses technical factors to score uptrend durability.

Momentum and alpha metrics compare performance over one-month, one-quarter and one-year timeframes, outputting a rating from A to D.

Trend/Volatility metrics measure price deviations relative to underlying moving averages.

RSI is an oscillator that provides mean-reversion estimations.

MACD is a momentum indicator rated from A to D based off the strength of its signal.

The table above is based upon a technical methodology that examines the past trading patterns and trades and is not intended to serve as a fundamental recommendation.

Source: Sustainalytics, Compustat, FactSet, Bloomberg and CIBC World Markets Inc.

Price Target Calculation

Our base case price target is based on our EV/EBITDA valuation where we apply a 22.5x EBITDA multiple to TRI's core Legal, Tax & Accounting, and Corporates segments, a 7.5x multiple to value Global Print and Reuters News and back out normalized corporate costs using a 20.9x blended average multiple. We also carry TRI's stake in LSEG at mark-to-market value.

Key Risks To Price Target

Execution Risk With Change Program: The change program is expected to result in a material lift to EBITDA margins given a number of operational changes. If the change program does not meet management targets for margin improvement, investors are likely to discount the multiple they are willing to pay. **Execution Risk With New Product and Version Launches:** Part of Thomson Reuters' growth strategy involves developing new products or services and improving existing products to meet the needs of end customers. There is risk in new product introduction stemming from missed product expectations and disruptions of service. **Acquisition Risk:** Some portion of Thomson Reuters' growth still stems from acquisitions, and the company continues to look for opportunities to enter new product markets that complement the existing business lines. There is risk associated with realizing returns from these investments and elevated costs associated with integration.

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 Thomson Reuters Corporation (TRI.N)

- 2g CIBC World Markets Inc. expects to receive or intends to seek compensation for investment banking services from these companies in the next 3 months: Thomson Reuters Corporation

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 27 Jun 2023)	Count	Percent	Inv. Banking Relationships	Count	Percent
Outperformer	154	52%	Outperformer	154	100%
Neutral	130	44%	Neutral	130	100%
Underperformer	6	2%	Underperformer	6	100%
Tender	0	0%	Tender	0	0%
Restricted	5	2%	Restricted	5	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.

© 2023 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.