# Vedanta - The \$650m Avanstrate Failure

How Avanstrate burned \$650m of shareholder value under the watch of an Agarwal family insider.

#### PLEASE READ IMPORTANT DISCLAIMER - PAGE 10

**November 18, 2025** - Over seven years, Vedanta Group incinerated more than \$650m on Avanstrate Inc, a business it knew was dying when it bought the glass substrate manufacturer.

Marketed as a strategic entry into display manufacturing, the acquisition was in reality a distressed salvage operation dressed up as strategy.

- Avanstrate has generated persistent losses, consumed shareholder capital, and ultimately left Vedanta holding a structurally insolvent business with no commercial future.
- Avanstrate holds no real productive assets. A significant portion of Avanstrate's asset base was ~6.1 tonnes
  of platinum bullion, booked under PPE. We believe the bullion was held as idle collateral, which was pledged
  for borrowings.
- Between FY24-FY25, Avanstrate liquidated ~\$94m in platinum, used to fund co-investor HOYA's exit. The final put option settled for ¥1—confirming the shares were worthless.
- By every metric, the company ceased to be a going concern years ago. Avanstrate Inc and its subsidiaries in Korea and Taiwan are facing creditor lawsuits for non-payment. Avanstrate Taiwan was also cited for multiple labor law violations.

The business was overseen throughout this period by Akarsh Hebbar, managing director of Avanstrate and Vedanta's global head of display and semiconductor operations, a role he held by virtue of being Group Chairman Anil Agarwal's son-in-law rather than any track record in the sector

This report traces the financial unraveling of Avanstrate, the misrepresentations that masked its decline, and the structural conflicts of interest that enabled it.

# Background

The Avanstrate Group is comprised of Avanstrate Taiwan and Avanstrate Korea, sitting beneath Avanstrate Inc (Japan). In FY18, CIHL acquired 51.63% of Avanstrate through a total investment of \$471.4m structured as:

- \$150.6m to acquire ASI and ASK bank debt worth \$300m.
- \$203.1m in loans to Avanstrate Inc. (Japan)
- \$117.7m in loans to Avanstrate Korea

This was a distressed recapitalization, not a growth investment. With over \$300m in loans replacing creditors and \$150m in fresh equity. Vedanta, through CIHL, effectively bought a dying business.

This was positioned as a strategic investment in display materials but has failed to generate any returns. On the contrary, Avanstrate's sales have shrunk significantly since FY18.

Note: Analysis of the Avanstrate entities is complicated by structural and jurisdictional issues: the assets sit across 3 jurisdictions (Japan, Korea, and Taiwan) with limited year-on-year comparability. Notably, in FY24, Avanstrate Inc, Avanstrate Taiwan, and Avanstrate Korea were audited collectively under IND AS by Rakesh M Agrawal, a minor Indian audit firm with no international experience, a one-off that was not repeated in FY25. This makes asset tracing across periods inconsistent and incomplete.



# Avanstrate: A Timeline

Avanstrate was never a turnaround story. It was a slow-motion collapse disguised by hype, misrepresentation, and related-party decision making. It's a story of how Avanstrate Managing Director Akarsh Hebbar, husband to Vedanta Chairperson Priya Agarwal, lit ~\$650m of shareholder value on fire.

Avanstrate E	vent Timeline
Period	Event
Dec-17	CIHL recapitalizes Avanstrate with a \$150m cash investment, \$201m in loans to
	Avanstrate Inc, and \$112m to Avanstrate Korea.
FY18 - FY23	Avanstrate's revenues deteriorate as gross and operating margins collapse. The
	Group fails to generate a gross profit from FY20 onward.
Feb-23	Innolux signs TFT-LCD technology transfer agreement with Vedanta, noting prior
	plans for Indian glass operations.
FY23	After years of impairments CIHL writes its investment in Avanstrate down to zero.
Jul-23	
	Vedanta Limited announces the acquisition of Avanstrate from Agarwal investment
	vehicle Volcan Investments in exchange for shares in Twin Star Technologies.
May-24	Vedanta announces the acquisition of HOYA's Avanstrate stake.
Aug-24	CIHL and HOYA agree to settle the put option for ¥1, confirming Avanstrate's equity
	is worthless.
	CIHL funds HOYA's exit via asset liquidations at Avanstrate Inc and Avanstrate
	Taiwan.
Nov-24	Vedanta states it intends to invest \$500m in Avanstrate to expand R&D.
FY25	CIHL marks the fair value of \$293m loan to Avanstrate Inc down to \$9.65m.
	Avanstrate and its subsidiaries declare multiple creditor lawsuits.
	Avanstrate liquidates platinum reserves to settle HOYA loans.

Figure 1 – Avanstrate Event Timeline

The Group has been in structural decline since acquisition, kept afloat only with loans from CIHL and asset sales.

Throughout this collapse, Vedanta has repeatedly misled the market about Avanstrate's prospects, announcing partnerships and expansion plans while the company was effectively insolvent.

In February 2023, it announced a JV with Innolux to transform India's display industry, omitting that the Company was functionally insolvent. In November 2024, Vedanta claimed it would invest \$500m into Avanstrate for R&D and expansion, just months before writing down the fair value of \$293m in loans to \$9.65m.

The platinum hoard at Avanstrate, the funding of HOYA's exit through forced asset sales, and the string of creditor lawsuits suggest this was not a recovery story.

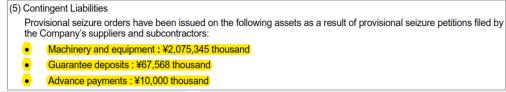
Avanstrate: The Turnaround That Never Came

Avanstrate's financials show a company in terminal decline, especially considering most of its asset base is unproductive. The Group has been systematically shrinking its operations since its acquisition by Vedanta.

	FY25	FY24	FY23	FY22	FY21	FY20	FY19	FY18
Net sales	22	32	37	57	37	41	94	136
COGS	33	50	63	69	64	79	91	110
Gross loss	(10)	(18)	(26)	(12)	(27)	(37)	2	26
SGA	9	34	19	14	12	12	12	19
Operating loss	(20)	(53)	(45)	(26)	(39)	(49)	(10)	7
NPAT	18*	(53)	(48)	(3)	(43)	(120)	(14)	(99)
Operating cash flow		(3)	(49)					
CapEx		(4)	(30)					
WC Changes		12	(27)					
Interest expense		(17)	(15)					
Normalized Free Cash Flow		(12)	(121)					

Figure 2 – Avanstrate Inc Consolidated Financial Performance

- Sales have fallen approximately 84 percent from \$136m in FY18 to \$22m in FY25. The sharp drop in FY19 points to obsolescence at Avanstrate's core product lines.
- Gross margins and operating margins have been negative for 6 years running, indicating it is structurally unprofitable.
- SGA has never adjusted to the shrinking top line. Instead of increasing, overheads actually exceeded revenues in FY24.
- The reported FY25 profit was a mirage driven by accounting gains, not operational improvements.
- Avanstrate generates negative OCF and normalized FCF.
- CapEx remains minimal across both years, reaffirming a deteriorating base and misrepresentation of nonproductive assets as PPE.
- Avanstrate Inc and both operating subsidiaries, Avanstrate Taiwan and Avanstrate Korea, are facing creditor lawsuits for non-payment since at least FY24.





Legal claim contingency

The suppliers of the Company have filed lawsuits against the Company due to the failure to make payments within the designated payment deadlines, seeking the payment of the outstanding amounts. As of March 31, 2025, there are three legal cases pending against the Company that have not yet commenced trial proceedings. The results of the litigation could not yet be estimated. However, the company has recorded the accounts payable and expenses in accordance with the actual events as stipulated by the contractual terms.

Figure 3, 4&5-Avanstrate Inc, Avanstrate Taiwan, and Avanstrate Korea FY25 Annual Reports, respectively

- Avanstrate Inc has not reported standalone sales nor COGS since FY19 suggesting that the Group has no operations in Japan since that period.
- Avanstrate Inc has been in violation of its loan covenants every year since March 2020 and relies on support from CIHL to continue operations.

Although the Company has breached the financial covenants at each interim and fiscal year-end since the fiscal year ending March 2020, it has received confirmation from the parent company of its intention to provide the financial support necessary for the continued operation of the Group's business for at least one year from March 31, 2025.

Figure 6 – Avanstrate Inc FY25 Annual Report

Avanstrate Korea did not use any of its emission allowances in FY24 suggesting minimal manufacturing activity. Roughly half of its FY23 allowances were cancelled due to "closure of all of part of the facilities".

(2) The increase or decrease in carbon credits during the year was as follows (Unit: tCO2e) 2024 Quarter 2022 Quarter Category Quantity Carrying Quantity Carrying Quantity Carrying Carrying 5,000 Carried-over **Ouantity fron** Prior Year Quantity of Free 30.653 30,653 30.653 30.366 Allocation Quantity Sold (5,477) (1,902) (30,176) (28,751) (13,938) Used(1) (556) 556 Borrowed Quantity(2) (17.271) Cancelled Allocation Quantity(3) Quantity Carried 29,810 Forward to Next Period

Figure 7 – Avanstrate Korea FY25 Annual Report

Between FY24 and FY25, Avanstrate Taiwan was cited in multiple labor law violations for underpayment, overwork and failure to provide compensation<sup>1</sup>.

By every available metric, Avanstrate ceased to be a going concern years ago.

# Total Capital Destruction of \$650m

Vedanta, through CIHL, funneled over \$650m over 7 years into the collapsing Avanstrate structure despite clear lack of recoverability.

- Even as fair value of the loans collapsed, the face value continued to climb as Vedanta spent good money after bad.
- CIHL booked \$74.2m in interest income from Avanstrate Inc in FY25, then impaired the accrued interest balance down to \$7.4m within the same year<sup>2</sup>. These are phantom revenues.

Avanstrate's Cash Burn	
Category	Amount (\$m)
Equity Injection	150.6
Loan to Avanstrate Inc	203.1
Loan to Avanstrate Korea	117.7
Incremental Loans (FY20–FY25)	174.9
Total Cash Spent	646.3
FY25 Fair Value of Loans	12.5
Estimated Cash Burn	633.8

<sup>&</sup>lt;sup>1</sup> https://announcement.mol.gov.tw/cmpqry/安瀚視特股份有限公司

<sup>&</sup>lt;sup>2</sup> Avanstrate Inc's FY25 amount owed including accrued interest is \$17.05m (CIHL FY25 Annual Report – page 25)

CIHL Avanstrate Loan Analysis (USDm)						
	FY25	FY24	FY23	FY22	FY21	FY20
Face Value of Loans						
Avanstrate Inc	293.1	270.5	301.5	255.6	230.8	220.0
Avanstrate Korea	58.2	82.2	93.5	102.1	112.3	115.0
Total Face Value	351.4	352.6	395.0	357.7	343.1	335.0
Fair Value of Loans						
Avanstrate Inc	9.7	19.8	87.0	120.9	143.4	136.1
Avanstrate Korea (inc accrued interest)	2.8	11.2	12.0	11.9	14.6	15.2
Total Fair Value	12.5	31.0	99.0	132.8	158.0	151.3
Recovery rate	4%	9%	25%	37%	46%	45%
Loan Funding Activity						
Loans Issued (net of repayment)	24.1	5.8	65.0	49.5	16.5	13.9
Interest Income (Net of amortization)	74.2	9.2	-18.4	150.3	93.0	9.3

Figure 8 CIHL Avanstrate Loan Analysis<sup>3</sup>

• CIHL's only security for its loans to Avanstrate Inc are shares in Avanstrate Korea and Avanstrate Taiwan. In effect, CIHL has secured its loans with its own assets.

Notes to the Balance Sheet     (1) Assets pledged as collateral and related I	
Machinery and equipment:	¥1,668 thousand
Shares of affiliated companies:	¥34,420,853 thousand
Total ·	¥34 422 521 thousand

34,420,956
34,420,853
21,684,250
103

Figures 9 & 10 – Avanstrate Inc FY25 Annual Report

# The HOYA Put Option: A Time Bomb on CIHL's Books

When CIHL acquired a majority stake in Avanstrate Inc in December 2017, it inherited a time bomb: a put option granted to co-investor HOYA Corporation. The agreement allowed HOYA to sell its 46.6% stake in Avanstrate to CIHL at a fixed price of \$0.757/share or fair market value.

The non-controlling shareholders of ASI have been given an option to offload their shareholding to the Company. The option is exercisable after 5 years from the date of acquisition at a price higher of \$0.757 per share and the fair market value of the share. Accordingly, Company has recorded a derivative liability of \$13.9m as fair value change through profit & loss. (Refer note 9)

Figure 11 – CIHL FY18 Annual Report

By FY24, CIHL marked this derivative liability at \$31.39m, a step price for equity in a business that had:

- \$279.8m in negative net assets
- Never generated a profit under its control
- Failed to generate positive gross margin for 5 years
- No feasible path to recovery

<sup>&</sup>lt;sup>3</sup> Avanstrate Korea's fair value of loans ex accrued interest is not published.



Instead, CIHL moved the put option exposure off the books:

- Between FY24 and FY25 Avanstrate Inc and Avanstrate Taiwan liquidated \$94m in platinum bullion.
- The proceeds were used to settle HOYA's outstanding loans and equity exit according to an agreement dated August 2024.
- In FY25 CIHL disclosed that the put option was extinguished for ¥1, effectively confirming the shares were worthless.

b) In September 2024, ASI, HOYA and Cairn India Holdings Limited ("CIHL") entered into a comprehensive agreement dated 5 August 2024, which provided for full settlement of liabilities and facilitated HOYA's exit from ASI. Pursuant to this agreement, CIHL acquired HOYA's ~46% equity stake in ASI. The agreed settlement amount was fully discharged on 26 August 2024, and the transfer of shares from HOYA to CIHL was completed on 29 August 2024, Following the transaction, CIHL's shareholding in ASI increased to approximately 98.2%.

c) As per the terms of the aforementioned settlement, the put option liability previously issued to HOYA was agreed to be settled at JPY 1. Accordingly, the derivative liability recognised in respect of the put option has been measured at NIL as at 31 March 2025 (31 March 2024: US\$ 31.39 Mn) as fair value change through profit and loss. (Refer Note 13 & 5b)

Figure 12 – CIHL FY18 Annual Report

This marked the end of Avanstrate: seven years, \$650m, and nothing to show for it.



# The Idle Platinum Bullion

A significant amount of Avanstrate's PPE since its acquisition consisted of  $^{\sim}6.1$  tonnes of platinum bullion. Much of this asset was never operational and was used as idle collateral which was eventually liquidated to fund HOYA's exit.

The recoverable amount is mainly measured by the net selling price calculated from the fair value of buildings, platinum equipment, and bullion.

Additionally, for idle assets other than platinum equipment and bullion, the recoverable amount is measured as zero because future cash flow estimates from asset use are uncertain.

Figure 13 – Avanstrate Inc FY25 Annual Report

While platinum has industrial uses in glass substrate manufacturing and Avanstrate holds patents relevant to those processes, the scale, treatment and behavior of this asset raises red flags.

- Platinum was booked under PPE yet held in saleable bullion form.
- The entire platinum balance was pledged as security for Avanstrate Inc's borrowings, again reinforcing it had to be in saleable bullion form and not used in production.
- Platinum prices moved significantly between FY19 and FY24 but carrying values were not adjusted to account for this.

### **Avanstrate Inc**

- Avanstrate Inc has reported incomes attributable to bullion lease fees from its subsidiaries since FY21<sup>4</sup>.
- Between FY24 and FY25, Avanstrate Taiwan sold platinum with a carrying value of NT\$2.37b (\$82.11m) to meet Avanstrate Inc's obligations to former owner HOYA.

		Machinery and		Transportation	
	Buildings	equipment	Office equipment	equipment	Platinum
Cost and revaluation:					
As at Apr. 1, 2023	\$5,144,452,614	\$9,536,462,995	\$161,239,941	\$8,000,495	\$4,702,462,030
Additions	-	-	-	-	-
Disposals	(27,754,509)	(276,235,735)	(4,599,368)	-	(21,236,973)
Transfer	9,839,200	307,033,574	24,200	-	-
Other changes				<u> </u>	
As at Mar. 31, 2024	\$5,126,537,305	\$9,567,260,834	\$156,664,773	\$8,000,495	\$4,681,225,057
Additions	-	-	-	-	-
Disposals	-	-	-	-	(2,320,224,223)
Transfer	693,000	12,644,204	1,000,000		
As at Mar. 31, 2025	\$5,127,230,305	\$9,579,905,038	\$157,664,773	\$8,000,495	\$2,361,000,834

Figure 14 – Avanstrate Taiwan FY25 Annual Report

■ In FY25 Avanstrate sold ¥1,890m (\$12m) of precious metals to settle its debts to HOYA and labelled the sale as disposal of "Machinery and Equipment – Sale of Precious Metals".

Category	Type of Asset	Beginning	Amount	Amount	Ending	Accumulated	Depreciati	
oatogo,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Balance (Thousands of yen)	Period	Decreased During the Period (Thousands of yen)	Balance (Thousands of yen)	Depreciation or Amortization at Period-End (Thousands of yen)	on/Amortiz ation Expense for the Period (Thousand s of yen)	Value at Period-End (Thousand s of yen)
Tangible Fixed	Machinery and Equipment	1,891,48 1		1,889,81 3	1,668	_		1,668
Assets	Tools, Furniture, and Fixtures	587		82	505	505	102	C
	Total	1,891,068		1,889,85	2,173	505	102	1,668
Intangibl e Fixed	Telephone Subscription Rights	73			73			73
Assets	Total	73			73	_	_	73
(Note) 1	. The main co	ontent of th	e "Amount	Decreased	During the	e Period"	is as follo	ws:

Figure 15 – Avanstrate Inc FY25 Annual Report

<sup>&</sup>lt;sup>4</sup> It is referred to as gold in prior periods, a nuance of translation.



 The remaining balance of ¥1.7m (\$11,151) was categorized as idle "Machinery and Transportation Equipment".

# (4) Idle Assets

The following item is included as an idle asset among tangible fixed assets :

• Machinery and transportation equipment: ¥1,668 thousand

Figure 16 – Avanstrate Inc FY25 Annual Report

# **Avanstrate Taiwan**

Between at least FY19 and FY24, Avanstrate Taiwan held NT\$4,702m (\$141m) in gross platinum assets on its balance. Of this balance NT\$3,962m (\$124m) remained unimpaired by FY24 despite years of operating losses and no recovery.

		Machinery and		Transportation	
	Buildings	equipment	Office equipment	equipment	Platinum
Carrying amount as at:					
Mar. 31, 2025					
Cost	\$5,127,230,305	\$9,579,905,038	\$157,664,773	\$8,000,495	\$2,361,000,834
Accumulated depreciation	(4,183,111,715)	(9,158,563,466)	(155,211,113)	(7,738,311)	-
Accumulated impairment		(201,655,576)			(733,012,000)
	\$944,118,590	\$219,685,996	\$2,453,660	\$262,184	\$1,627,988,834
Mar. 31, 2024					
Cost	\$5,126,537,305	\$9,567,260,834	\$156,664,773	\$8,000,495	\$4,681,225,057
Accumulated depreciation	(4,098,357,434)	(9,052,326,805)	(152,026,349)	(7,578,311)	-
Accumulated impairment		(201,655,576)		<u> </u>	(718,980,296)
	\$1,028,179,871	\$313,278,453	\$4,638,424	\$422,184	\$3,962,244,761
Mar. 31, 2023					
Cost	\$5,144,452,614	\$9,536,462,995	\$161,239,941	\$8,000,495	\$4,702,462,030
Accumulated depreciation	(4,037,962,063)	(9,187,640,329)	(151,875,843)	(7,359,133)	-
Accumulated impairment		(203,037,601)			(703,975,283)
	\$1,106,490,551	\$145,785,065	\$9,364,098	\$641,362	\$3,998,486,747

Figure 17 – Avanstrate Taiwan FY25 Annual Report

## **Avanstrate Korea**

 Avanstrate Korea does not break out what portion of PPE is platinum but did recognize the entire balance of Machinery and Equipment KRW48,857m (\$33m) in FY24 as pledged as collateral.

Account Title	Fundamentals	Acquisition	Disposal	Depreciation expense	Impairment losses	Final
Machinery (*)	53,540,353	-	(1,248,068)	(1,455,369)	(1,979,393)	48,857,523
Fixtures	2,389,029	-	(109,523)	(1,165,064)	(1,114,442)	
Assets under construction	1,843,425	405,614	(195,278)	-	(2,053,761)	
Total	57,772,807	405,614	(1,552,869)	(2,620,433)	(5,147,596)	48,857,523
* ) As of th	he end of th	• '		•	- i	

Figure 18 – Avanstrate Korea FY25 Annual Report

• We were informed by former employees that Avanstrate Korea's platinum could not be liquidated as they were embedded in production, effectively stranding them.



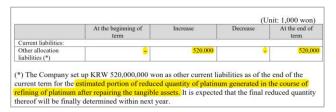




Figure 19 & 20 - Avanstrate Korea FY22 and FY23 Annual Reports, respectively

- The Company declared a NT\$520m (\$15.6m) provision for platinum loss during refinement process in FY23 that was decreased by the same amount in FY24. This pattern of yo-yoing provisions started in FY21.
- According to our calculations, the Avanstrate Group held ~6.1 tonnes of platinum across its operating entities worth \$183m at its peak.
- While relatively compact (2 filing cabinets could contain it), this amounts to roughly a third of the global glass-sector demand in 2024<sup>5</sup>.

# The Cost of Nepotism

The person overseeing this seven-year, \$650m bonfire is Akarsh K Hebbar, managing director of Avanstrate Inc and Global Vedanta's Managing Director of Semiconductor and Display business<sup>6,7</sup>.

He also happens to be the husband of Vedanta Limited's chairperson Priya Agarwal, and the son-in-law of Anil Agarwal. Hebbar has no relevant experience in display manufacturing (or semiconductors).



Managing Director of AvanStrate Inc.

- 2009, Graduated in Engineering from Mumbai University
- 2009, Joined ORACLE Financial Service Software Ltd Associate consultant
- 2014, Joined GOOGLE INDIA PVT. LTD., Mumbai, India YouTube
- 2015, Completed Masters in Business Administration from
- 2015, Joined McKinsey & Co., Mumbai, India as Associate BTO Consultant
- 2020, Managing Director (current position)

Figure 21 – Avanstrate Inc – People

Hebbar was also the public face of Vedanta Semiconductor Private Limited, which was used as a sham-trading smokescreen to funnel emergency financing to VEDL likely in violation of FEMA rules. Our report on VSPL can be

https://viceroyresearch.org/2025/07/18/vedanta-vedanta-semiconductor-%e2%82%b92500-crore-dhoke-kasammraajy/

The Avanstrate saga is what happens when nepotism governs capital allocation: a \$650m loss overseen by an unqualified insider with no display or semiconductor expertise, protected by family ties.

<sup>&</sup>lt;sup>5</sup> https://platinuminvestment.com/files/763325/WPIC Platinum Quarterly Q2 2025.pdf

<sup>&</sup>lt;sup>6</sup> https://www.avanstrate.com/english/company/people.html

<sup>&</sup>lt;sup>7</sup> https://www.vedantalimited.com/public/uploads/11525/Press-Note-Vibrat-Gujarat-Global-Roadshow.pdf



# Attention: Whistleblowers

Viceroy encourage any parties with information pertaining to misconduct within Vedanta Resources, its affiliates, or any other entity to file a report with the appropriate regulatory body.

We also understand first-hand the retaliation whistleblowers sometimes face for championing these issues. Where possible, Viceroy is happy act as intermediaries in providing information to regulators and reporting information in the public interest in order to protect the identities of whistleblowers.

You can contact the Viceroy team via email on viceroy@viceroyresearch.com.

#### **About Viceroy**

Viceroy Research are an investigative financial research group. As global markets become increasingly opaque and complex – and traditional gatekeepers and safeguards often compromised – investors and shareholders are at greater risk than ever of being misled or uninformed by public companies and their promoters and sponsors. Our mission is to sift fact from fiction and encourage greater management accountability through transparency in reporting and disclosure by public companies and overall improve the quality of global capital markets.

# Important Disclaimer - Please read before continuing

This report has been prepared for educational purposes only and expresses our opinions. This report and any statements made in connection with it are the authors' opinions, which have been based upon publicly available facts, field research, information, and analysis through our due diligence process, and are not statements of fact. All expressions of opinion are subject to change without notice, and we do not undertake to update or supplement any reports or any of the information, analysis and opinion contained in them. We believe that the publication of our opinions about public companies that we research is in the public interest. We are entitled to our opinions and to the right to express such opinions in a public forum. You can access any information or evidence cited in this report or that we relied on to write this report from information in the public domain.

To the best of our ability and belief, all information contained herein is accurate and reliable, and has been obtained from public sources we believe to be accurate and reliable, and who are not insiders or connected persons of the stock covered herein or who may otherwise owe any fiduciary duty or duty of confidentiality to the issuer. We have a good-faith belief in everything we write; however, all such information is presented "as is," without warranty of any kind – whether express or implied.

In no event will we be liable for any direct or indirect trading losses caused by any information available on this report. Think critically about our opinions and do your own research and analysis before making any investment decisions. We are not registered as an investment advisor in any jurisdiction. By downloading, reading or otherwise using this report, you agree to do your own research and due diligence before making any investment decision with respect to securities discussed herein, and by doing so, you represent to us that you have sufficient investment sophistication to critically assess the information, analysis and opinions in this report. You should seek the advice of a security professional regarding your stock transactions.

This document or any information herein should not be interpreted as an offer, a solicitation of an offer, invitation, marketing of services or products, advertisement, inducement, or representation of any kind, nor as investment advice or a recommendation to buy or sell any investment products or to make any type of investment, or as an opinion on the merits or otherwise of any particular investment or investment strategy.

Any examples or interpretations of investments and investment strategies or trade ideas are intended for illustrative and educational purposes only and are not indicative of the historical or future performance or the chances of success of any particular investment and/or strategy. As of the publication date of this report, you should assume that the authors have a direct or indirect interest/position in all stocks (and/or options, swaps, and other derivative securities related to the stock) and bonds covered herein, and therefore stand to realize monetary gains in the event that the price of either declines.

The authors may continue transacting directly and/or indirectly in the securities of issuers covered on this report for an indefinite period and may be long, short, or neutral at any time hereafter regardless of their initial recommendation.