Analyst: Angelo Camalieri

December 20, 2021

Industrials, Miscellaneous Manufacturing

Brady Corporation

Recommendation: Buy				
Current Price	$52.25	---	Ticker	BRC
1 Year Bear	$54	*11%*	Sh. Out. (M)	51.8
1 Year Base	$62	*22%*	M.Cap. ($B)	2.73
1 Year Bull	$68	*33%*	EV ($B)	2.67

Price History

	5Y	3Y	2Y	LTM	YTD	3M	1M
Return	52%	28%	-6%	10%	3%	6%	4%

Summary

I recommend a buy rating with a price target of $62. Although organic sales growth has been flat, Brady made three acquisitions in fiscal 2021 that create synergies by targeting a market estimated to grow at a rate well above GDP growth. Combined with Brady's proven ability to cut costs, the stock is poised for long term earnings growth. The stock is moderatley undervalued based on relative and DCF analysis.

Financials

	2017	2018	2019	2020	2021	2022F	2023F
Sales($M)	1,113	1,174	1,161	1,081	1,145	1,291	1,350
Gr. %	-0.7%	5.4%	-1.1%	-6.8%	5.9%	12.8%	4.6%
v. Cons.	-	-	-	-	-	13.0%	3.0%
Industry	6.5%	6.3%	0.1%	-6.4%	12.9%	8.3%	4.8%
EPS	$1.84	$1.73	$ 2.46	$2.11	$2.47	$2.94	$3.32
Gr. %	16.5%	-5.8%	42.0%	-14.2%	17.0%	18.9%	12.9%
v. Cons.	-	-	-	-	-	23.5%	13.1%
Industry	14.2%	83.0%	7.7%	-2.4%	32.0%	20.7%	12.6%

Ratios

	2017	2018	2019	2020	2021	2022F	2023F
NPM	8.6%	7.8%	11.3%	10.4%	11.3%	12.0%	13.2%
Industry	6.4%	9.0%	10.2%	8.7%	7.4%		
ROE	14.7%	12.5%	16.4%	13.1%	14.2%		
Industry	11.4%	21.0%	21.3%	15.8%	11.4%		
ROA	9.1%	8.6%	11.3%	9.8%	9.4%	10.5%	11.0%
Industry	24.6%	28.5%	27.8%	24.0%	6.0%		
A T/O	1.06	1.11	1.05	0.94	0.91	0.88	0.83
D/A	10.3%	5.0%	4.3%	0.0%	2.8%		

Valuation

	2017	2018	2019	2020	2021	2022F	2023F
P/E	20.8	25.1	23.3	25.0	27.7	16.8	14.9
Industry	29.0	28.9	21.1	28.0	25.2	24.0	21.2
P/S	1.77	1.94	2.63	2.60	2.76	2.11	2.04
P/B	2.78	3.00	3.57	3.18	3.16		
P/CF	13.73	16.00	18.94	19.63	15.65	13.89	12.68
EV/EBITDA	10.6	10.7	13.6	12.7	14.2		
D/P	2.5%	2.2%	1.6%	1.9%	1.6%		

Key Drivers

- Secular Trends in the AIDC Space: The automatic identification and data capture (AIDC) market is growing at a 10% CAGR and is expected reach $100 billion by 2030. Brady's largest segment focuses on the space.
- Acquisitions of Faster Growing Applications: Brady made three acquisitions at the end of fiscal 2021 for $244M (21% of F21 sales), which bring new technology and a stronger focus on the AIDC space.
- International Exposure Concerns: Despite international expansion providing growth opportunities, it also exposes Brady to international political and economic risks.
- Online Presence and Expanding Sales Force: Brady's marketing through digital channels has been historically weak. Increased spending on digital marketing and an expanding sales force could provide organic sales growth, which it had issues with in the past.

Valuation

Using a relative valuation approach, Brady Corp. appears to be undervalued in comparison to competitors in the AIDC and safety space. DCF analysis implies that the stock is worth $63. A combination of the approaches suggests that Bray Corp. is undervalued, as the stock's value is about $62 and the shares trade at $52.25.

Risks

- Fluctuations in foreign currencies could impact sales and margins.
- Increased competition in the AIDC market could cause my growth forecasts to not materialize.

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Company Overview

Brady Corporation (BRC) is a global manufacturer and provider of identification solutions and workplace safety products. Headquartered in Milwaukee, WI, and getting its start in 1914, Brady now has roughly 5,400 employees with locations in Africa, Asia, Australia, Europe, and the Americas. BRC's history of prioritizing customer service and providing quality solutions in a wide range of diverse, proprietary and individual products has helped the company position itself as a global leader in niche markets.

With a focus on specialty business-to-business sales, the firm's products are mainly used inside manufacturing facilities, public buildings, and electrical applications. One of the main legacy products includes printing systems that allow customers to print safety signs, labels, and other safety identification needs on-site. Additional legacy products include barcode printers and scanners, accompanied by software that enable customers to automatically identify and collect data. Over time, the product portfolio has grown as BRC acquired more than 30 businesses between 2003 and 2010, leading it to triple in size.

Brady Corporation operates with two segments, Identification Solutions (IDS), and Work Place Safety (WPS).

The ID Solutions segment focuses on providing identification solutions that help track people and products while protecting/securing facilities. The segment makes up roughly 73% of BRC's overall revenue and caters to a wide range of industries including electrical and industrial manufacturing, healthcare, chemical, oil, gas, automotive, aerospace, governments, education, leisure and entertainment, and telecommunications. Brady manufacturers and distributes 69% of its IDS segment under the Brady brand which includes label printing materials, systems, and software. Other brands are industry and product specific. Utility products are marketed under the Electomark brand; security and identifications badgers under the IDenticard, PromoVision, Brady People ID, BIG, and MAGiCARD, brands; spill control products under the SPC brand; lockout/tagout products under the Scafftag brand; radio frequency identification (RFID) products under the Nordic ID brand; barcode scanners under the Code brand; and healthcare patient identification as well as custom wristbands for leisure events under the PDC brand. Competition for the segment is fragmented across each offering, ranging from small local firms to very large firms. However, Brady's focus on certain industries and its development of individual, proprietary products for customers has given it a unique advantage over its smaller competitors. Despite Covid-19's negative effects in the 2020 and 2021 financial period, sales have been relatively flat in recent years.

BMP21: Portable Label Printer

S3100: Sign and Label Printer

Brady Workstation: Scanner, Printer, and Software.

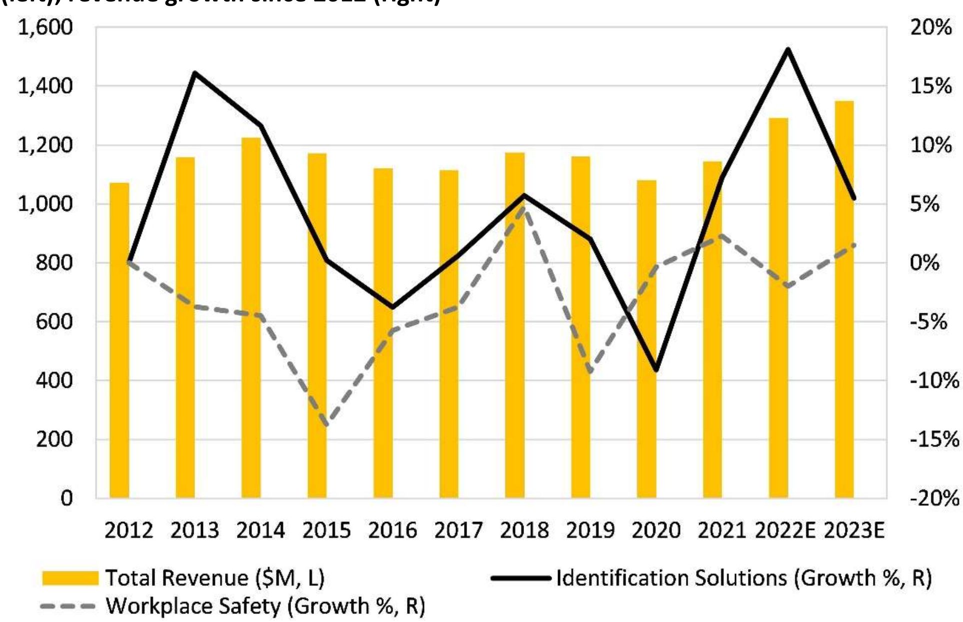
Lockout Toolbox Kit with 3 Padlocks

Covid-19 Floor Decal

Tall Fire Extinguisher "V" Sign

The WPS segment focuses on providing personal and facility safety products that meet compliance standards. The segment includes a range of stock, custom, and resale products of which 40% are internally manufactured and 60% are externally sourced. Sales are derived from maintenance, repair, and operations ("MRO") customers. Similar to the IDS segment, products are marketed under several brands dependent on their use case. The breakdown is as follows: safety facility identification products under the Seton, Emedco, Signals, Safety Signs, SafetyShop, Signs & Labels, and Pervaco brands; labor law and compliance posters under the Personnel Concepts and Clement Communications brands; first aid supplies under the Accidental Health and Safety, Trafalgar, and Securimed brands; and wire identification products marketed under the Carroll brand. Opposite of the IDS segment, Covid-19 provided a boost in WPS product sales. Prior to Covid-19, these sales were flat.

Figures 1 & 2: 2021 revenue by segment (left); revenue growth since 2012 (right)



Source: Company reports

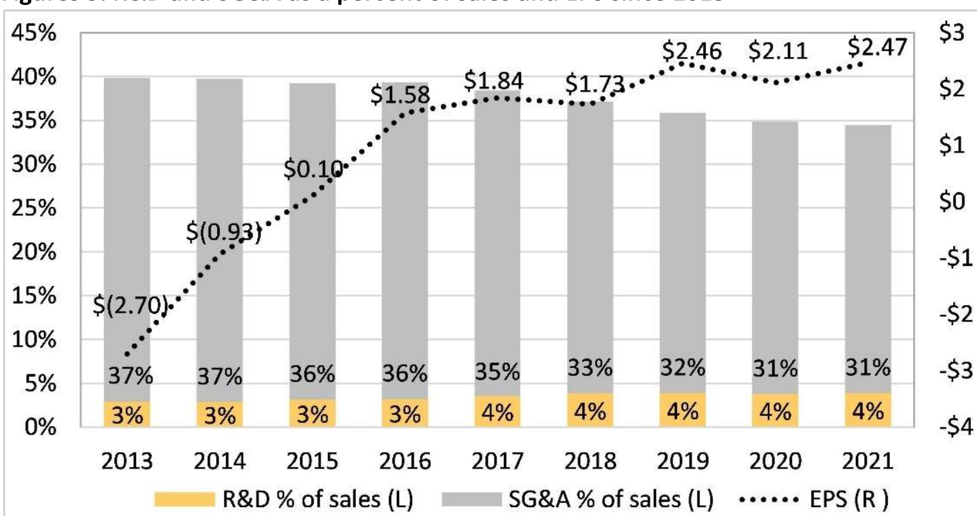
As mentioned earlier, Brady's historical growth strategy included the acquisition of existing companies. However, prior to 2021, the company had not made a single acquisition since 2013. During this extended period, in an attempt to drive organic sales growth, Brady increased R&D as a percent of sales to 4% from 3%. However, as seen in the graph above, the strategy has had nearly no effect. To further prove the point, when CFO, Aaron Pearce, was asked about top-line growth in relation to R&D, he could not guarantee that there had been any observable effects on sales. However, he did advise that, from a salesman perspective, customers enjoy knowing that they have innovative suppliers.

Despite seeing a rebound in sales for fiscal 2021, sales are still down 1% vs pre-pandemic levels.

The lack of success with R&D has caused demand for Brady's products to become stagnant over the past five years with sales down 6.6% from their peak in 2014**.** This lack of demand growth has to do with (1) the nature of Brady's products and (2) its customers. Products, do not require frequent repeat purchases, causing Brady to rely heavily on replacement demand. A prime example of this is its signage offerings, which, unlike subscription software, only require repurchases when they fall below compliance standards. On the other hand, Brady's focus on customer service and scale relative to its smaller competitors allows it to gain repeat business from customers who are expanding operations.

Brady's main customers segment are a very diverse group that operates in their own niche markets. Despite no single customer making up more than 10% of net sales, many of them are manufacturers. Manufacturing has been declining in the U.S. over the past few decades. Serving these customers required Brady to expand into international markets. However, after entering these new markets, I believe the same issue regarding replacement demand has continued.

Figures 3: R&D and SG&A as a percent of sales and EPS since 2013



Earnings are up 240% from 2015 due to decreasing SG&A to 31% of sales from 37%.

In an attempt to maintain shareholder value, Brady Corp has become more efficient and reduced costs as much as possible to increase earnings, which have risen nearly 240% since 2015. By automating in-house processes and reducing overhead, the firm has decreased SG&A as a percentage of sales from 37% to 31%. The ability to increase efficiency by this magnitude is impressive; however, cutting costs cannot last forever.

The combination of these factors has led Brady to revert to its former strategy of growth through acquisitions. By taking advantage of its strong cash position of $322 million (20% of total assets) going into the fiscal fourth quarter, the company made three technology-based acquisitions for a total of $244M (~21% of F21 sales) (~12% of '21 FYE market cap). All of the acquisitions are part of the IDS segment and include Code Corporation, Nordic ID, and MagiCard. This strategic move shifted part of the firm's portfolio to garner faster-growing applications, known broadly as the "automated identification and data collection" market, and is supposed to complete Brady's track and trace solution product offering.

Business/Industry Drivers

Though several factors may contribute to Brady's future success, the following are the most important business drivers:

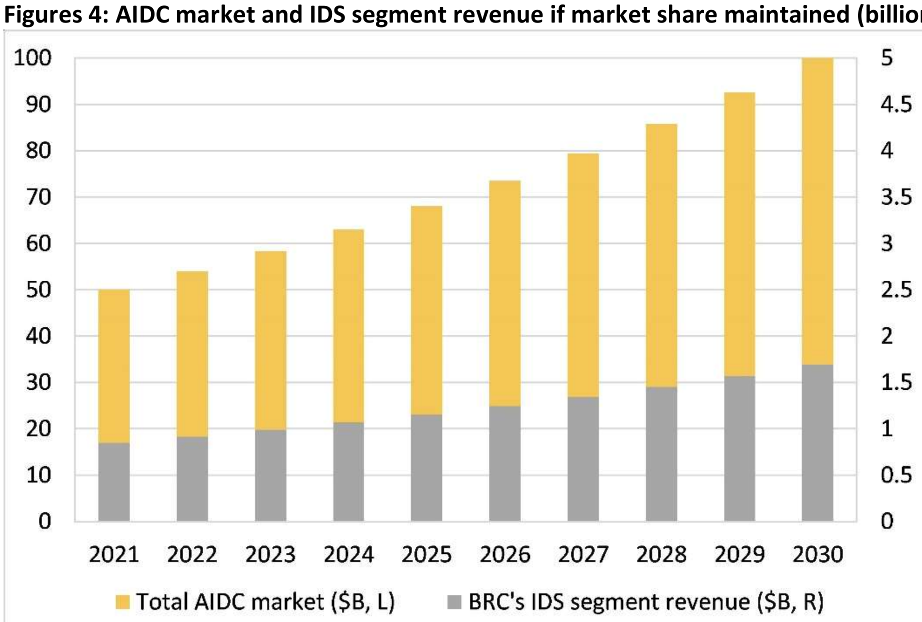
1) Secular Trends in the AIDC Space
2) Acquisitions of Faster Growing Applications
3) International Exposure Concerns
4) Competitors
5) Macroeconomic Trends
6) Online Presence and Expanding Sales Force

Secular Trends in AIDC Market

Automatic identification and data capture (AIDC) in business has greatly improved the way information is collected and used to manage logistics and supply chain management. Advancements in the ADIC space now include brand new ways to collect and analyze data. Technologies such as QR codes, biometrics such as iris and facial recognition systems, magnetic strips, radio frequency identification (RFID), smart cards, optical character recognition, and voice recognition fall under the domain of AIDC. According to Meticulous Research ®, the market may be worth $100 billion by 2030, representing an 8% CAGR from its current worth of $50 billion. In addition, research anticipates that the developers of the hardware (vs software) will benefit most from future growth. The driving demand for AIDC includes the digitalization of business, expansions in e-Commence, and retailers' use of the technology to improve customer experiences. Most notably the manufacturing, healthcare, and retail industries have benefited the most as AIDC allows user access to real-time detection of assets, inventory, and people. Over the years, Brady has been a part of this market with its legacy barcode printers and scanners, accompanied by its software. The space could lead to solid growth opportunities pending the successful integration of Brady's existing offerings with its recent acquisitions.

The AIDC market is projected to grow 8% per year through 2030.

Figures 4: AIDC market and IDS segment revenue if market share maintained (billion)



The prospects for growth provided by the AIDC market are limited by Brady's portfolio of products and market share. Currently, the AIDC space is worth $50 billion while Brady's 2021 IDS sales were only $842 million. Assuming that all of Brady's IDS sales are true AIDC products, Brady has 1.7% of the total market share. If Brady were to maintain this market share, annual sales for the IDS segment would be $1.7 billion by 2030. However, it is unclear what the true break down of Brady's IDS sales are and I assume most products sold are not considered part of the AIDC space. If Brady plans to achieve the full benefit of secular trends in the AIDC, space it will need to continue to develop products in house and most likely make further acquisitions.

Acquisitions of Faster Growing Applications

Code Corporation ("Code") is the largest ($173M net of cash received), and' the most relevant, of the three acquisitions. Code specializes in high-performance barcode scanners with 100+ patents and holds a strong presence in the U.S. healthcare systems. The scanners are used to track drugs and patients within healthcare facilities. I believe the strategic rationale for the acquisition is Code's proprietary software. This is because the strong presence in the healthcare sector is a result of Code's software, allowing users to easily access and read data. The software is licensed in yearly increments which allows Brady to benefit from recurring revenue. This reduces the need for repeat purchases of scanners.

Code Corp. handheld and hands-free barcode scanners

Management anticipates revenue of ~$50 million and EBITDA, net of integration costs, of ~$10 million for fiscal 2022. This implies a P/S of 3.5x and an EV/EBITDA of 17.3x compared to 2.4x and 14.2x for all of Brady Corp. Thinking about the long-term possibilities, I believe that introducing Code's technology to Brady's existing IDS industrial customers provides an attractive opportunity for future growth. However, management has not made it clear if the integration costs of Code Corp will continue beyond 2022 which could negatively affect Brady's bottom line.

Nordic ID, a Finland-based company, is said to complete Brady's track and trace product offerings. Despite the smaller purchase price (~$13 million), it provides Brady with radio frequency identification (RFID) readers, scanners, and their associated software. By utilizing a cloud platform, these products digitize the asset tracking experience by allowing manufacturers to analyze their workflow in real-time.

Outside of manufacturers, the products have already been used onsite in the retail industry. The offering is referred to as "S/Mart" with the 'S' standing for smart. S/Mart utilizes the properties of RFID tags and scanners to allow registered customers entry, self-checkout, and exit on the condition that all items leaving the store have been paid for. According to Verified Market Research, the retail automation market is currently worth $14 billion and is expected to reach $32 billion by 2028 (11% CAGR). While it is unclear what current S/Mart sales are, the growth prospects make the space highly competitive and lucrative for first movers. Additionally, while Amazon's Go stores offer a similar service to the S/Mart it is difficult to replicate due to higher start-up costs from its dependence on high-tech cameras, which Bloomberg estimated to be over one million dollars.

Nordic RFID Handheld Readers *Nordic S/Mart Shopping Process*

It is anticipated that Nordic ID will provide ~$11 million in revenue (1.2x P/S) and a break-even of EBITDA, net of integration costs, for the fiscal year-end of July 31, 2022. The combining Nordic ID and Code's technology along with Brady's market position in niche application of industrial printers and materials could accelerate growth in industrial track-and-trace applications in the long-run. However, it is hard to determine how long it will take for this to materialize.

The three acquisitions add $96M (11%) in IDS revenue and increase BRC's AIDC market share to 1.9% from 1.7%.

Magicard Holdings Limited ("Magicard"), the second-largest acquisition with a price of ~$59 million, offers full-color, high-resolution ID card printers with built-in security protocols and the ability to encode smart cards. Also referred to as rigid cards, they are the IDs one would need to gain access to office buildings and other spaces that are restricted to non-authorized personnel. Furthermore, the desktop devices of Magicard satisfy the requirements of those facilities that utilize security ID cards as they provide on-demand and onsite printing capabilities. Despite Brady's diverse IDS offerings in the credential and access control space, the printing and encoding capabilities that Magicard possesses fills a gap that is needed to continue competing in the industry. Management anticipates revenue of ~ $35 million (1.7x P/S) and EBITDA, net of integration costs, of ~$4 million (14.8x EV/EBITDA) for the fiscal year 2022. Plans to expand Magicard's addressable market through Brady's presence in Europe, Asia, and the Americas, could provide great growth opportunities for Magicard offerings. However, Brady's secure access offerings are not as sought after as its other products and most of Magicard's revenue comes from the UK. Another factor that could make this difficult is that there are already existing competitors with a larger global presence.

Magicard onsite ID Printers

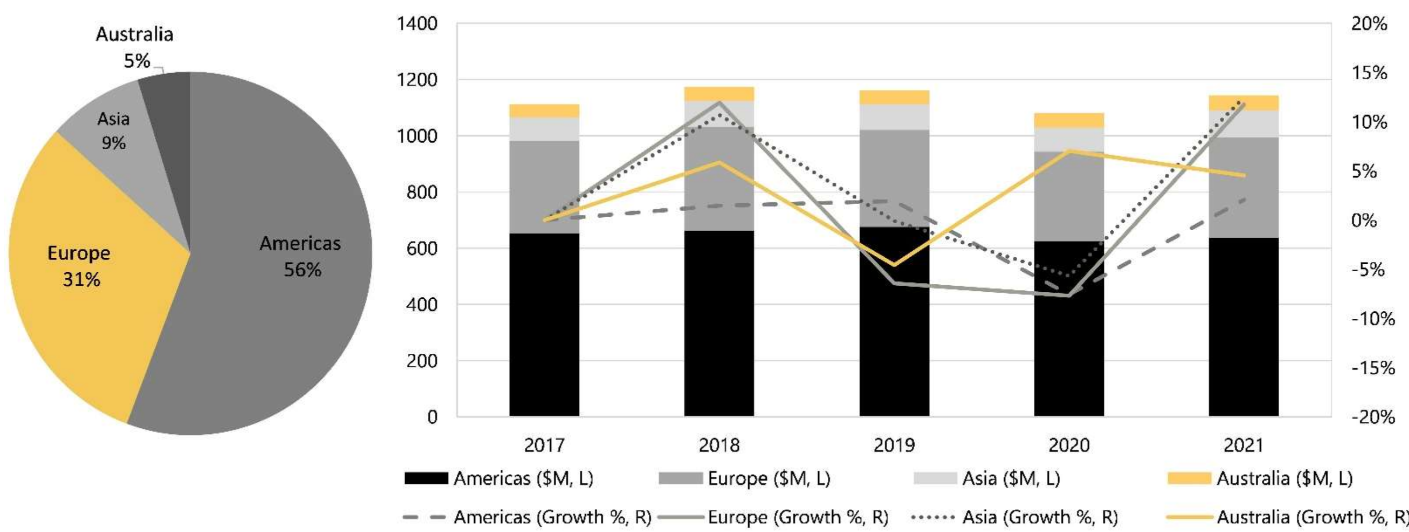
<u>International Exposure Concerns</u>

As noted previously, Brady has resorted to global expansion to continue growing its sales. Being a global operator is a huge advantage for the firm as it is able to weather economic cycles better than companies that operate solely in one country. Recently, management has noted its plans for further expansion in Asia. However, the details have not yet been made public.

- In 2017, 59% of the firm's revenue was generated from customers in the Americas. Over the past four years, sales growth has ranged from negative 7.5% to positive 2%, resulting in the America's only accounting for 56% of total revenue during fiscal 2021.
- Europe accounted for 30% of total revenue in 2017. Since, total sales in the continent have increased 8% resulting in Europe now accounting for 31% of revenue.
- Operations in Australia, which are made up of solely Work Place Safety products, have grown from 4% of sales in 2017 to 5% in 2021 representing a CAGR of 3% during the period.
- The fastest-growing geography for Brady is Asia. Contrary to Australia, operations in are solely part of the ID Solutions segment. Since 2017, the segment has grown 17%, and now makes up approximately 8% of Brady's total sales.

While international provides growth opportunities, it also exposes Brady to the risks of international political, economic, and other risks. Fluctuations in foreign currencies either benefit or hurt sales figures to the tune of 1-3%. Currency translation adjustments for fiscal years 2021, 2020, and 2019 were favorable by $10.3 million, favorable by $6.6 million, and unfavorable by $13.2 million, respectively. Each $10 million adjustment results in a ~$0.15 change in EPS. Going forward, increased strength in the U.S. dollar will increase the price of products in foreign counties making it more expensive for customers to work with Brady. Conversely, a declining U.S. dollar could increase material costs and hurt margins. Additionally, due to the threat of competition, Brady may not be able to pass on these costs to customers as it could risk losing their business.

Figures 5 & 6: 2021 Revenue concentration by geography (left); revenue vs YoY revenue growth rate since 2017 (right)



Source: Company reports

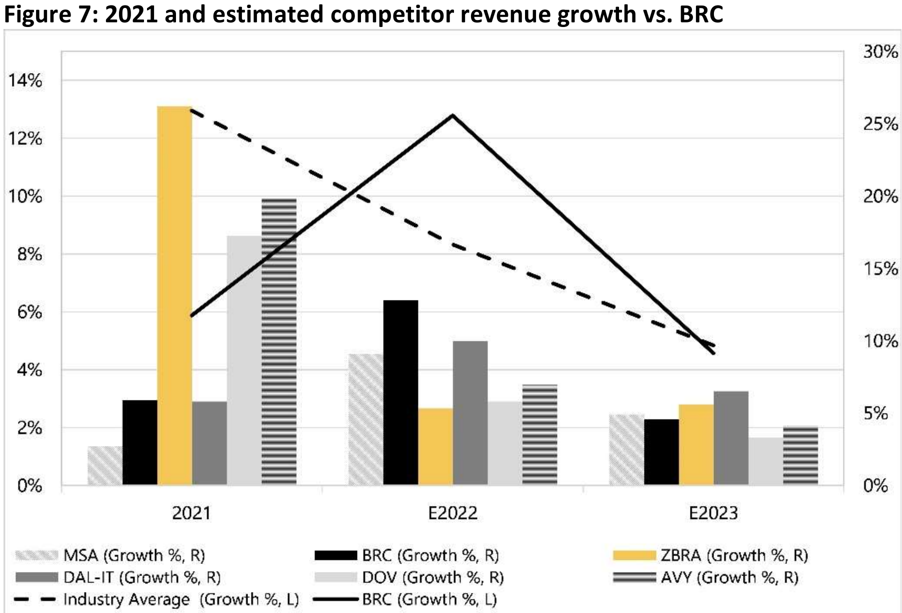
<u>Competitors</u>

Despite management stating that many of its competitors are small, local firms, the larger competitors are similar to Brady with diversified product offerings and international operations. Brady's diverse products is an advantage as it provides protection against larger competitors stealing market share. This is true for the WPS and ID Solutions segments. However, Brady's recent shift to focus more on AIDC has opened it up to competitors who are also pursing the space. Brady's fragmented competition also makes comparative analysis difficult. None of the analysts who cover Brady have the same peer groups and often compare the company to paper packaging manufacturers.

- Zebra Technologies Corp. (ZBRA) is Brady's largest competitor. Zebra organizes itself into two segments, Asset Intelligence & Tracking (AIT) and Enterprise Visibility & Mobility (EVM). AIT products include barcode and card printing, location solutions, supplies, and services. EVM focuses on mobile computing, data capture, and RFID.

- MSA Safety, Inc. (MSA) is the largest competitor with a focus similar to BRC's WPS segment. MSA engages in the development and sale of innovative products, which enhances the safety and health of workers and protects facility infrastructure.
- Datalogic S.p.A (DAL-IT) engages in manufacturing and the provision of automatic data capture and industrial automation, including bar code scanners, mobile computers, measurement and security sensors, vision and laser markings and RFID systems.
- Dover Corp (DOV) engages in the manufacturing of equipment, components, and specialty systems. Like Brady, Dover's products end up in many diverse markets. Segments include Engineered Products, Fueling Solutions, Imaging and Identification, Pumps and Process Solutions, and Refrigeration Equipment.
- Avery Dennison Corp. (AVY) engages in the provision of labeling and packaging materials and solutions. It operates through the following segments: Label & Graphic Materials, Retail Branding & Information Solutions, and Industrial & Healthcare Materials. It is estimated that 24% of AVY revenue comes from Asia.

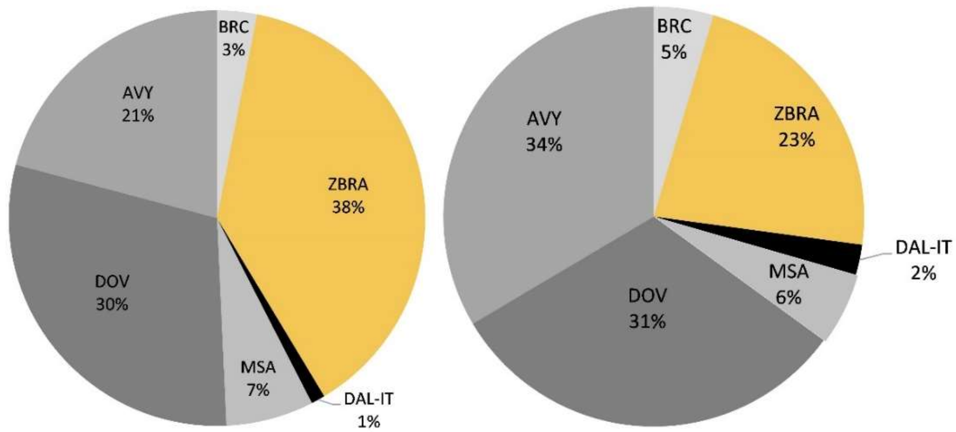
Figure 7: 2021 and estimated competitor revenue growth vs. BRC



I anticipate Brady's revenue growth to outpace the competition in 2022 before matching the consensus average growth in 2023. As time goes on, the expected growth in the AIDC space (8% CAGR), which is above GDP growth, will attract more competitors. This is especially true in countries where a majority of manufacturing takes place. As noted previously, Brady announced plans to further expand in Asia. While AVY is the only competitor with sales in Asia, larger competitors, like ZBRA, could enter the market and pose a threat to Brady's future success in the continent.

Figures 8 & 9: Competitor concentration by market cap (left) vs. sales (right)

BRC's share of market cap is lower than its share of sales which reflects more risk in its growth.



Source: FactSet, Company Reports

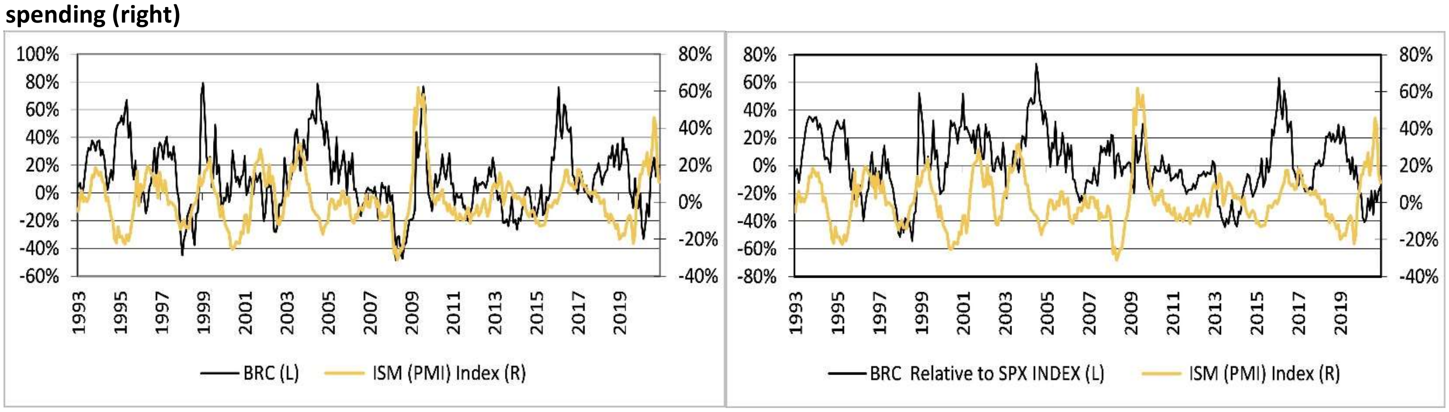
Since Brady's margin is above average (see figure 24) investors must believe it has more risk and/or lower growth than its competition.

Macroeconomic Trends

Brady Corp derives its sales internationally with majority of it coming from the Americas (56%). While the company does not clarify how much of sales is derived from the United States, I believe that is safe to say that at least half of revenue from the Americas are from the U.S. Like Brady, many ISM survey participants sell too foreign countries. As shown in figure 10, even though there are leads and lags in at times, Brady is positively correlated to the ISM index, which is a survey that tracks manufacturing and economic growth.

Conversely, figure 11 shows that relative to the S&P, Brady is less correlated to the ups and downs in the U.S. economy. Thus, Brady is more stable than the market. The main driver of this is Brady's international presence which provides the firm with 46% of its revenue. A secondary driver for its defensiveness is the firm's wide range of product offerings; however, it has much less of an effect. Finally, its offerings are needed to run the business, so if they break down customers still replace them during recessions.

Figures 10 & 11: BRC absolutive performance vs industrial spending (left); BRC performance relative to the S&P vs industrial spending (right)



Source: Bloomberg, IMCP

Online Presence and Expanding Sales Force

Brady markets its products through direct, catalog, and digital channels. However, Brady's digital presence has been weak. In fiscal 2021, one of Brady's key initiatives was expanding and enhancing its sales capabilities through an improved digital presence and the use of data-driven marketing automation tools. The detail of its digital strategy is unclear, but since the plan was announced I have seen advertisements on sites such as YouTube and Amazon as a result of algorithms picking up on my search patterns. On Brady's Q1F22 earnings call, the firm also noted it was increasing its sales force in fiscal 2022. It is unclear what historical and future spending on Brady's marketing strategy look like. However, it is important to consider whether increases in online spending and an expanding sales force will lead to a reversal in Brady's trend to increase margins, which grew from 2013 to 2021 as a result of lower SG&A as a percentage of sales.

Financial Analysis

I am more pessimistic than consensus estimates for 2022 and 2023, particularly in terms of EPS. I believe that the acquired companies provide strong growth potential for Brady's goal to develop a complete suite of track and trace applications, but integration will take time and they will pay off more in later years. However, I anticipate stronger sales and EPS growth in 2023 driven by synergies from acquisitions and increased marketing spend.

2022 EPS and revenue growth estimates below consensus.

Figure 12: EPS and YoY growth estimates

	2022E	2023E
Sales	$ 1,291	$ 1,350
YoY Growth	12.8%	4.6%
Revenue Consensus	$ 1,294	$ 1,333
YoY Growth	13.0%	3.0%
EPS	$2.94	$3.32
YoY Growth	18.9%	12.9%
EPS Consensus	$3.05	$3.45
YoY Growth	23.5%	13.1%

Source: Factset, IMCP

Figure 13: Quantification of 2022 EPS drivers

Source: Company Reports, IMCP

I anticipate EPS to grow to $2.94 in FY 2022. Higher revenues from acquisitions and organic growth should increase earnings by $0.33, offset by a $0.07 per share decrease in gross margins due to increases in raw materials and shipping costs. Increases in SG&A to sales from newly acquired headcount and increased marketing efforts, and higher R&D spend as a percentage of sales from Code Corp and Nordic ID, decrease EPS a further $0.03. I forecast $75 million in share buybacks for 2022 as the firm recently authorized $200 million. Share buybacks and other immaterial items increase EPS by $0.21.

Share buybacks are the largest contributor to 2023 EPS.

Figure 14: Quantification of 2023 EPS drivers

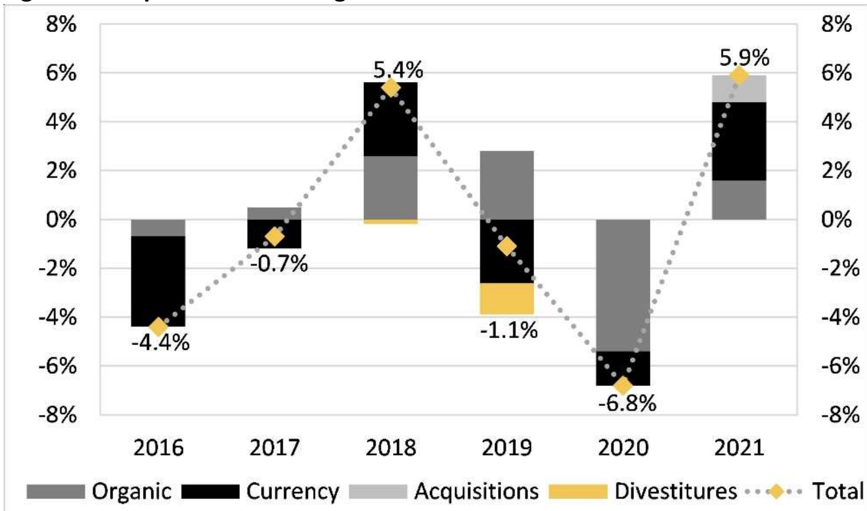
Source: Company Reports, IMCP

I expect 2023 EPS to increase $0.38 to $3.32. Brady will gain $0.14 of earnings from increased sales in both segments. I anticipate an expansion in gross margin from reduced raw material and shipping costs which will add $0.11 to EPS. SG&A expenses are forecasted to be a higher percent of sales due to efficiencies taking time to develop and will decrease EPS by $0.02. I expect another $75 million in share buybacks to take place in 2023 which will add $0.16 to EPS.

Revenues

Despite a bump in 2021, revenue has been flat since peaking in 2014. Unlike many industrial peers that suffered in 2021, Brady attributed its growth to increased demand for products that helped combat Covid-19. Quantitatively, the largest impact on 2021 revenue growth (5.9%) was foreign currency translations (3.8%), followed by organic growth (1.6%), and one quarter of revenue from acquisitions (1.1%). Not including the full year increase in 2022 sales from acquisitions, I expect its flat sales trend to reverse in 2022 and 2023.

Figure 15: Aspects of revenue growth since 2016

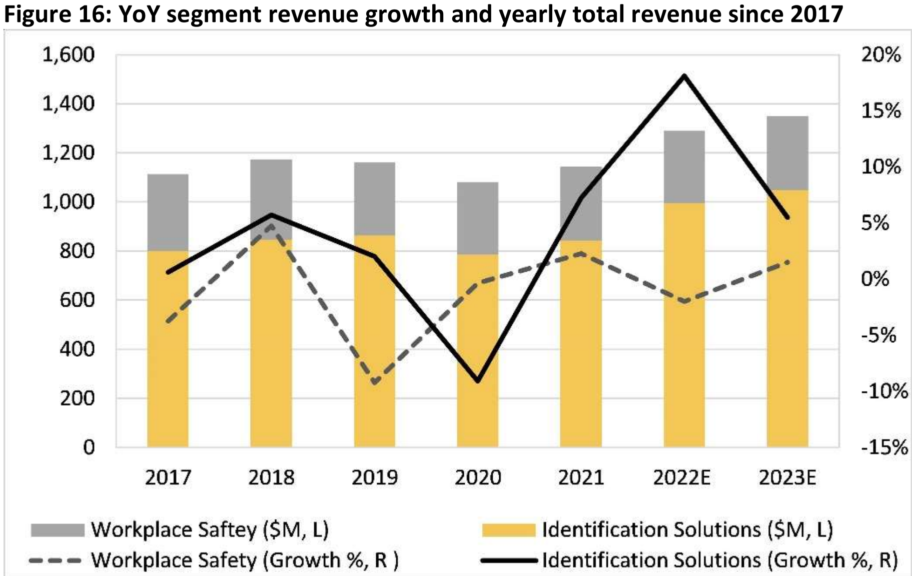


Source: Company Reports

BRC will benefit from being the sole supplier to customers in need of a suite of track and trace solutions.

Including foreign currency translations, in 2022, I expect IDS sales to have inorganic growth of 11% and organic growth 7%. Inorganic growth is a function of management's guidance on expected revenue for Code Corp ($50M), MagicCard ($35M), and Nordic ID ($11M). Organic growth is a result of increased marketing efforts, a larger customer base from Covid-19, and further development in Brady's complete track and trace product offering. Brady's complete track and trace offering does include products from acquisitions but I believe that existing products will gain from customers choosing to go through one supplier.

Figure 16: YoY segment revenue growth and yearly total revenue since 2017



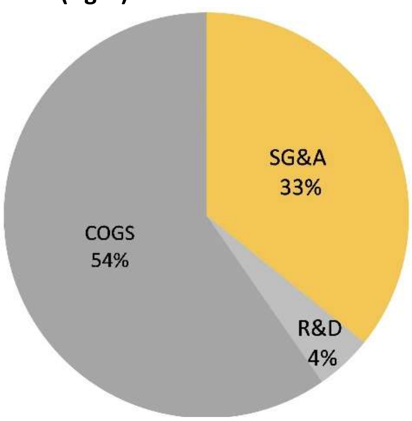
Source: Company Reports

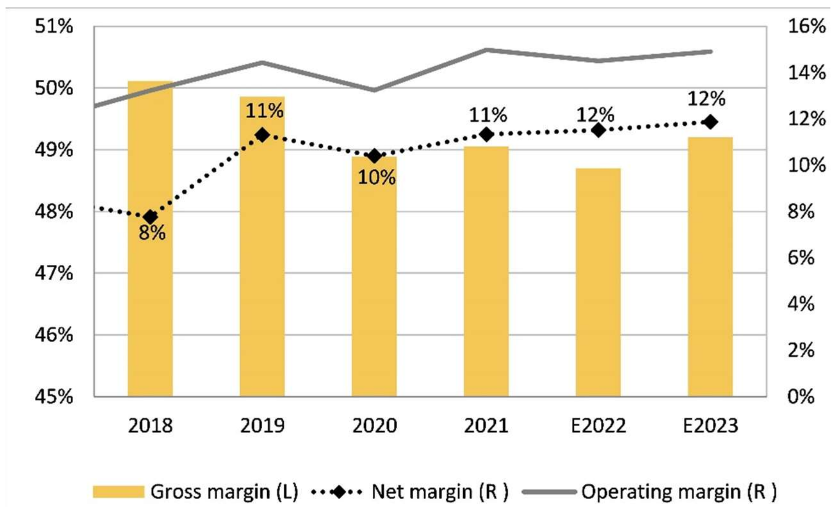
In 2022, I expect WPS sales to decrease (-2%) due to tough comparable in 2021, which was a result of increased demand for personal and facility safety products. However, I expect WPS sales to be slightly higher than 2020 levels. In 2023, I expect both segments to have positive growth due the elimination of Covid-19 concerns and continued growth from marketing and R&D.

Operating Income and Margins

Operating expenses are primarily composed of Costs of Good Sold (COGS), selling general and administrative (SG&A), and research and development (R&D) expenses. Historically, COGS has trended between 49% and 50%, but has increased to 51% in fiscal 2020 and 2021. The higher COGS is a result of increases in WPS sales as percentage of total revenue, which has higher input costs than IDS, and supply chain issues. In 2022, I expect gross margin to be the lowest it has been in recent years primarily due to increased air shipping as a result of Brady's commitment to customer satisfaction.

Figures 17 & 18: Composition of 2021 operating expenses (left); gross margin, operating margin, and net margin since 2018 (right)





Source: Company Reports

Historically, decreasing SG&A expense as a percentage of sales, has been a key driver for Brady to create shareholder value (31% in F21 from 37% in F14). I expect that trend to continue as Brady works to integrate its acquisitions. However, efficiencies will take time to develop and I expect that increases in headcount, from its acquisitions and an expanding sales force, to negatively impact SG&A.

R&D has trended around 4% of sales in recent years, but I expect a slight increase due to Nordic's and Code's higher dependance on R&D.

Figure 19: Operating margins, 2020 – 2023E

	2020	2021	2022E	2023E
Sales	$ 1,081	$ 1,145	$ 1,291	$ 1,350
Cost of goods sold	553	583	662	686
Gross income	529	561	629	664
Gross margin	48.9%	49.0%	48.7%	49.2%
Operating expenses	385	390	442	463
Growth	-6%	1%	13%	5%
Operating income	143	171	187	201
Operating margin	13.2%	15.0%	14.5%	14.9%

Source: Company Reports

Return on Equity

Brady Corp's 2021 ROE is down from its peak in 2019 due to higher taxes and lower asset turnover. The increase in assets was a result of its acquisitions, higher inventory, and higher receivables. I expect Brady to return to 2019's levels of ROE in 2023 as sales continue to increase while inventory and receivables decrease to pre-pandemic levels. Also, leverage is expected to rise modestly while the tax rate falls to pre-Covid levels. Historically, Brady's level of debt has been low but increases in the ratio could boost ROE higher than my 2023 estimates.

Brady's debt to asset ratio was only 2.8% 2021.

Figure 20: ROE breakdown, 2019 – 2023E

5-stage DuPont	2019	2020	2021	2022E	2023E
EBIT/Sales	14.4%	13.2%	15.0%	14.5%	14.9%
Sales/avg assets	1.05	0.94	0.91	0.91	0.95
EBT/EBIT	98.3%	98.5%	99.7%	99.4%	99.7%
Net income/EBT	79.7%	79.7%	75.8%	79.9%	79.9%
ROA	11.9%	9.8%	10.3%	10.5%	11.2%
Avg assets/avg equity	1.38	1.34	1.38	1.45	1.45
ROE	16.4%	13.1%	14.2%	15.2%	16.3%

Source: Company Reports

Free Cash Flow

Figure 21: Free cash flow calculations

Free Cash Flow ($M)	2017	2018	2019	2020	2021	2022E	2023E
NOPAT	$100	$93	$134	$114	$136	$150	$161
Growth		*-6.9%*	*43.6%*	*-14.4%*	*18.7%*	*10.2%*	*7.5%*
NWC*	90	99	102	106	60	101	116
Net fixed assets	642	586	584	633	913	929	900
Total net operating capital*	$732	$685	$686	$739	$973	$1,030	$1,016
Growth		*-6.5%*	*0.3%*	*7.6%*	*31.7%*	*5.8%*	*-1.3%*
- Change in NWC*		9	3	3	(46)	41	15
- Change in NFA		(57)	(2)	49	280	16	(29)
FCFF*		$141	$132	$62	($98)	$93	$174
Growth			*-6.4%*	*-53.0%*	*-258.6%*	*-*	*87.5%*
- After-tax interest expense	4	2	2	2	0	1	1
FCFE**		$139	$129	$60	($99)	$92	$173
Growth			*-6.8%*	*-53.5%*	*-263.8%*	*-193.3%*	*88.8%*
* NWC excludes cash							
** No adjustment is made for debt							

Source: Company Reports, IMCP

Brady's free cash flow had decreased from positive ~$140 million to negative ~$100 million over the last two years due to acquisitions. Still, the firm had over $205 million of capital in cash and was able to pay down $50 million in debt in 2020. Over the next two years, I forecast that NOPAT will grow at a much faster pace than net operating capital (returns to normal levels), and FCF to rise to $174 million in 2023. BRC's term loan facility will provide the ability to meet any funding shortfalls that may arise. The firm recently authorized $200 million in share buybacks and I expect the firm to use most of it over the next two years, as the stock price has not reacted to Brady's new determination for growth.

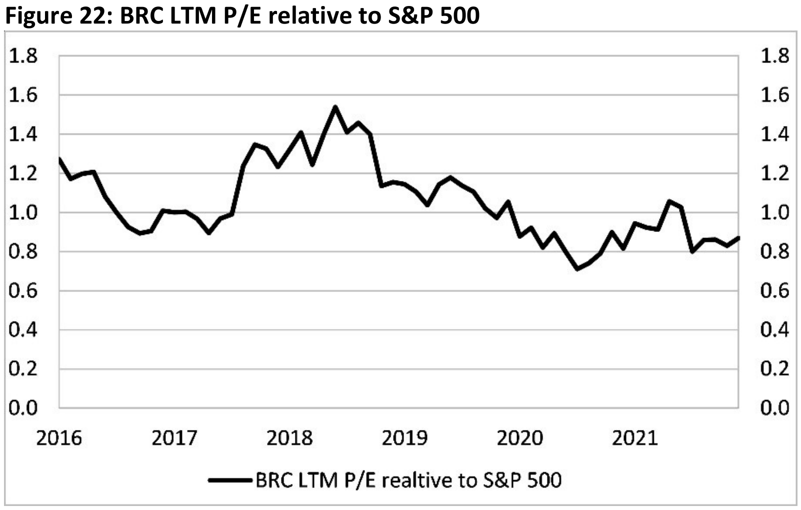
Valuation

BRC was valued using multiples and a 3-stage discounted cash flow model. Based on earnings multiples, the stock is cheap and is worth $55.87; however, due to the growth of BRC's earnings over the past year, and higher relative risk to future growth, this metric may be unreliable. Relative valuation shows BRC to be slightly undervalued based on its fundamentals versus those of its peers in the AIDC and safety industry. A detailed DCF analysis values BRC at $64.02; I give this value more weight because it incorporates assumptions that reflect BRC's ongoing growth strategy. Finally, a bull and bear scenario analysis yield a price of $69.74 and $58.27, respectively. As a result of these valuations, I value the stock at $66.00.

Trading History

BRC is currently trading near its five-year low relative to the S&P 500. This is the result of recent earnings expansion and the fact that most analysts believe that that the risk related to future earnings growth is relatively high. BRC's current LTM P/E is at 21.0x compared to its five-year average of 22.17x. While I expect some regression towards that number in the future, I do not think that is likely to be the case in the near term.

Figure 22: BRC LTM P/E relative to S&P 500



Source: FactSet

Assuming the firm maintains a 21.0x TTM P/E at the end of fiscal 2022, it should trade at $61.74 by July 31, 2022:

- Price = P/E x EPS = 21.0 x $2.94 = $61.74.

Discounting $61.74 back to today at a 10.4% cost of equity (explained in Discounted Cash Flow section) yields a price of $55.92. Given my own analysis of BRC's potential for earnings growth, this seems to be an unusually low valuation. However, this makes sense because I am less bullish about near-term earnings than consensus.

Relative Valuation

BRC is undervalued relative to its peer group.

Brady Corp is currently trading at a P/E moderately lower than its peers, with a P/E TTM of 21.0x compared to an average of 25.4x. Despite Brady's potential for greater growth than many of its peers in the segment, I attribute three (3) reasons why investors are not willing to pay the same premium for Brady. (1) First, Brady has proven the ability to cut costs to increase earnings but has not proven its ability to create organic sales growth. Hence, investors are skeptical about Brady's potential for future growth once its acquisitions are integrated. Additionally, as stated previously (2) the analyst who cover the company compare it to peers more similar to Brady's past than its future. These peers have multiples that reflect lower growth prospects**.** (3) Finally, Brady has a class A and B share structure, which gives all voting rights to the founder's decedents and limits institutions influence. Since Brady's executives have no voting rights, it's important to consider what drove management to pursue new growth opportunities.

Brady's executive compensation structure motivated management to pursue new growth opportunities in 2020 and 2021.

Mr. Michael Nauman (President, CEO, and Director since 2014) has several fiscal year objectives that he is still incentivized to achieve from before 2021, as well as annual organic sales and NOPAT growth. Mr. Aaron Pearce (CFO and Treasurer since 2015) is incentivized through fiscal year objectives from before 2021, as well as annual cash flow generation, reductions in SG&A expenses, and NOPAT growth. Figure 23 highlights changes in their executive compensation structure which I believe motivated management to focus more on increasing organic sales and NOPAT in 2020 and 2021.

Figure 23: Executive Compensation Factor Weights

	2016	2017	2018	2019	2020	2021
Total Organic Sales	30%	30%	30%	30%	35%	35%
NOPAT	50%	50%	50%	50%	55%	65%
Fiscal Year Objectives	20%	20%	20%	20%	10%	0%

Figure 24: BRC relative valuation vs peer group

Ticker	TTM P/E	P/S	NPM	P/B	ROE	P/Cf
BRC	**21.0**	**2.37**	**11.2%**	**2.82**	**15.7%**	**13.9**
ZBRA	37.5	5.59	14.8%	11.17	31.9%	29.1
DAL-IT	19.7	1.44	7.0%	2.06	12.1%	13.4
MSA	*60.6*	4.03	8.8%	6.81	22.4%	
DOV	25.7	3.07	12.3%	6.18	27.7%	19.5
AVY	23.0	2.04	8.7%	9.47	44.4%	18.5
Average	**25.4**	**3.09**	**10.5%**	**6.42**	**22.0%**	**18.9**

Brady's P/S multiple also trades at a discount (2.37x vs. 3.09x average) even though its profit margin is slightly above average. If I used the same peer group as other analysts, the multiple would be more appropriate.

Brady's below average P/B multiple reflects its below average ROE (15.7% vs 22.0% average). However, it is important to note that Brady's ROE is lower than its peers due to its very low debt ratio (9.4% debt/equity vs 43.6% average), so it is a higher quality (lower risk) ROE.

Brady's P/CF is also relatively lower (13.9x vs 18.5x average) which again suggests that investors are less confident in Brady's ability to grow future cash flows.

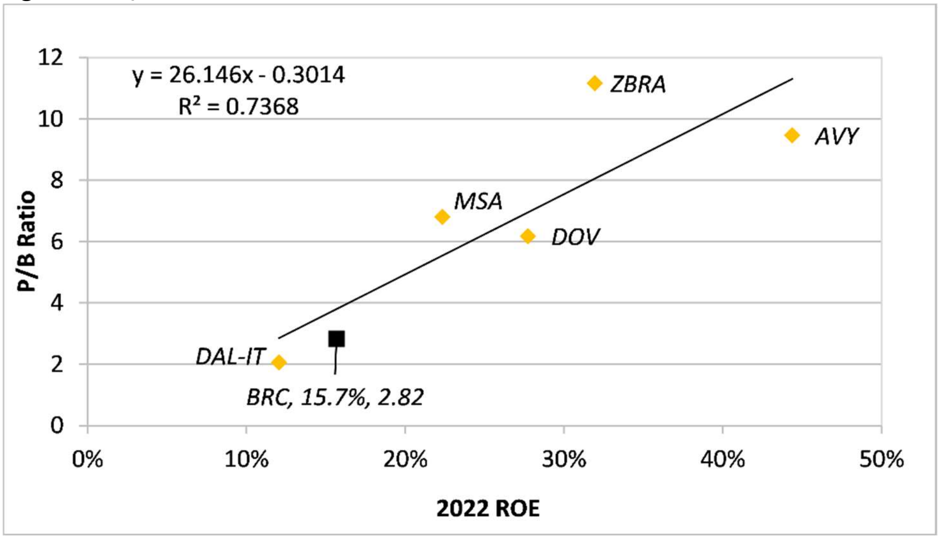
A more thorough analysis of P/B and ROE is shown in figure 29. The calculated R-squared of the regression indicates that over 74% of a sampled firm's P/B is explained by its NTM ROE. BRC has the second lowest P/B and ROE of this grouping, and according to this measure is undervalued. However, given the headwinds that the economy is dealing with, I believe that ROE will be more highly valued by investors in the coming months. I used the slope of the regression line to yield the below equation to find P/B.

- Estimated P/B = Estimated 2022 ROE (15.7%) x 26.146 - .3014 = 3.80

- Target Price = Estimated P/B (3.80) x 2022E BVPS (19.57) = $74.37

Discounting back to the present at a 10.43% cost of equity leads to a target price of $67.0535 using this metric.

Figure 25: P/B vs NTM ROE



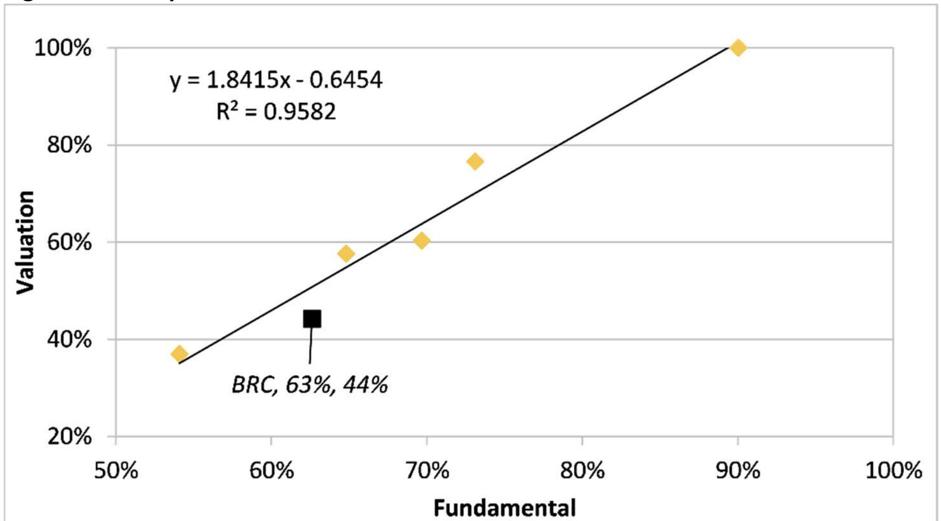
Source: IMCP

Figure 26: Composite valuation, % of max

		Fundamentals				Valuation					
	Weight	30%	20%	30%	20%	40%	15%	30%	15%		
Ticker	Name	2023 EPS Growth	2022 ROE	NPM	STM Sales Growth	2022 P/E	P/B	P/S	P/CF	Fund	Value
BRC	BRADY CORP	75%	35%	76%	52%	51%	25%	42%	48%	63%	44%
ZBRA	ZEBRA TECHNOLOGIES CP -CL A	85%	72%	100%	100%	100%	100%	100%	100%	90%	100%
DAL-IT	DATALOGIC SPA	64%	27%	48%	76%	49%	18%	26%	46%	54%	37%
MSA	MSA SAFETY INC	100%	50%	59%	76%	87%	61%	72%	73%	73%	77%
DOV	DOVER CORP	56%	63%	83%	78%	64%	55%	55%	67%	70%	60%
AVY	AVERY DENNISON CORP	48%	100%	59%	64%	61%	85%	36%	64%	65%	58%

For a final comparison, I created a composite ranking of several valuation and fundamental metrics. Since the variables have different scales, each was converted to a percentile before calculating the composite score. Fundamental weightings for 2023 earnings growth, 2022 ROE, 2021 NPM, and STM sales growth was compared to a valuation composite of 2022 P/E, P/B, P/S, and P/CF. The weights can be found above in figure 24. The regression line had an R-squared of 0.96. On the next page in figure 27, one can see that BRC is below the line, so it is inexpensive based on its fundamentals.

Figure 27: Composite relative valuation



Source: FactSet, IMCP

<u>Discounted Cash Flow Analysis</u>

A three-stage discounted cash flow model was also used to value Brady Corp.

For the purpose of this analysis, the company's cost of equity was calculated to be 10.4% using the Capital Asset Pricing Model. The underlying assumptions used in calculating this rate are as follows:

- The risk-free rate, as represented by the ten-year Treasury bond yield, is 1.50%.
- A five-year peer group average beta of 1.05 was utilized since the group has higher risk than the market.
- A long-term market rate of return of 10% was assumed, since historically, the market has generated an annual return of about 10%.

Given the above assumptions, the cost of equity is 10.43% (1.50 + 1.05 (10.0 – 1.50)).

Stage One - The model's first stage simply discounts fiscal years 2022 and 2023 free cash flow to equity (FCFE). These per share cash flows are forecasted to be $1.82 and $3.59, respectively. Discounting these cash flows, using the cost of equity calculated above, results in a value of $4.59 per share. Thus, stage one of this discounted cash flow analysis contributes $4.59 to value.

Stage Two - Stage two of the model focuses on fiscal years 2024 to 2028. During this period, FCFE is calculated based on revenue growth, NOPAT margin, and capital growth assumptions. The resulting cash flows are then discounted using the company's 10.4% cost of equity. I assume 5% sales growth in 2024, declining to 2% through 2028. The ratio of sales to NWC to sales returns to historical levels and NFA turnover will rise from 1.39 to 1.60 in 2028 as a result of acquisitions being fully integrated. Also, the NOPAT margin is expected to rise to 13% in 2028 from 11.6% in 2022.

Figure 28: FCFE and discounted FCFE, 2022 – 2028

	2022	2023	2024	2025	2026	2027	2028
FCFE	$1.82	$3.59	$2.91	$3.40	$3.21	$3.63	$4.16
Discounted FCFE	$1.64	$2.94	$2.16	$2.29	$1.95	$2.00	$2.08

Added together, stage two discounted cash flows total $10.48.

Stage Three – Net income for the years 2024 – 2028 is calculated based upon the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from $3.63 in 2024 to $4.36 in 2024.

Figure 29: EPS estimates for 2022 – 2028

	2022	2023	2024	2025	2026	2027	2028
EPS	$2.94	$3.32	$3.63	$3.80	$4.05	$4.28	$4.36

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. For the purpose of this analysis, it is generally assumed that the larger the growth prospects a company has the bigger premium, above the historical average of the S&P 500, that is applied to its P/E multiple. Therefore, a P/E ratio of 22x is assumed at the end of BRC's terminal year. While this may be a high multiple at the end of 2028, considering that growth will be slowing by then one must consider what the market will price in today. A lower multiple may be better to calculate a fair value, but the stock will likely trade above this value once the market begins to price in BRC's new found growth.

Given the assumed terminal earnings per share of $4.36 and a price-to-earnings ratio of 22x, a terminal value of $95.96 per share is calculated. Using the 10.4% cost of equity, this number is discounted back to a present value of $47.93.

Total Present Value – given the above assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of $63.00 is calculated (4.59 + 10.48 + 47.93). Given BRC's current price of $52.25, this model indicates that the stock is modestly undervalued.

<u>Scenario Analysis</u>

Brady Corp is difficult to value with certainty because it is nearly impossible to predict with certainty how much of the AIDC market Brady will capture. Furthermore, the firm has mentioned that is willing to make further acquisitions if it has issues creating organic growth. I also valued Brady Corp. under a bull and bear case scenario by changing a combination of key factors.

Bull Case – Brady Corp. has mentioned making other acquisitions if R&D is not able to generate organic growth. Trying to factor in potential acquisitions into reasonable assumptions is not possible. However, a likely scenario is that Brady will continue to acquire new businesses while R&D and marketing efforts generate more sales than I anticipated.

Figure 30: Bull case analysis

Bull Case Expectations	2022	2023	2024	2025	2026	2027	2028
Beta	1.02						
Sales Growth	12.8%	4.6%	5.0%	4.0%	12.0%	5.0%	4.0%
NOPAT/S	11.6%	11.9%	12.4%	12.8%	12.8%	13.0%	13.0%
S/NFA	1.39	1.50	1.52	1.54	1.56	1.58	1.60
Terminal Year P/E	22.00						

Performing the same three-stage DCF analysis with my bull case assumption and decreasing Brady's beta to its five-year average of 1.02 result in a price of $68.39

Bear Case – Strong growth assumes that BRC's new growth strategy is able to benefit from growth in the AIDC space. Historically, Bady has had issues creating organic growth but I anticipate it being able to do so in the future. A likely scenario is that the company does not make any other acquisitions and only grows sales 3% a year. In addition, NOPAT margin may not return to my base case assumptions (13%).

Figure 31: Bear Case analysis

Bear Case Expectations	2022	2023	2024	2025	2026	2027	2028
Beta	1.10						
Sales Growth	12.8%	4.6%	3.0%	3.0%	3.0%	3.0%	3.0%
NOPAT/S	11.6%	11.9%	12.4%	12.4%	12.5%	12.5%	12.5%
S/NFA	1.39	1.50	1.52	1.54	1.56	1.58	1.60
Terminal Year P/E	20.00						

Performing the same three-stage DCF analysis with my bear case assumption, a higher beta of 1.10, and a terminal year P/E of only 20x result in a price of $54.08.

Current Market Assumptions – To determine what the market assumes about Brady's future; I used the same three-stage DCF to back into the current share price of $52.25. Knowing that other analysts predict sales to grow at similar rates to my own assumptions in 2022 and 2023, it is apparent that the market does not expect Brady have more than 1% sales growth following 2023. Additionally, the market does not expect margins to return to normal levels. I find this scenario very unlikely.

Figure 32: Current market assumptions

Current Market Assumptions	2022	2023	2024	2025	2026	2027	2028
Beta	1.06						
Sales Growth	12.8%	4.6%	1.0%	0.5%	0.5%	1.0%	1.0%
NOPAT/S	11.6%	11.9%	11.9%	11.9%	11.9%	11.9%	11.9%
S/NFA	1.39	1.50	1.60	1.65	1.70	1.70	1.75
Terminal Year P/E	20.96						

Business Risks

Although I have many reasons to be optimistic about Brady Corp. there are several good reasons why the market is assuming higher levels of risk.

Exposure to currency fluctuations:

Nearly 50% of BRC's revenues are denominated in currencies other than the dollar. Continued strength of the dollar against the foreign currencies could seriously reduce gross margins.

Competitive marketplace:

Competition in the AIDC market is growing and Brady's strong focus on the space may not materialize to the extent that I forecasted.

New Technology:

Brady Corp recently made three technology-based acquisitions. Failure to integrate the new technology with its own could negatively impact sales. I anticipate customers will be attracted to Brady due to it providing all their AIDC needs.

Global Operating Risks:

Brady success depends on the global economy. Another global economic crisis or recession would impact my forecasts as Brady's sales tend to grow along with its customers.

Appendix 1: Porter's 5 Forces

Threat of New Entries – Relatively High

While the barriers to entry into the AIDC are extensive, the prospects for growth are quite high. The most significant threat would be increased competition in the space, especially in Asia where Brady's competitor Avery Dennison Corp. (AVY) derives ~28% of its sales.

Threat of Substitutes – Moderate

Brady relies on its customer satisfaction in order to charge higher prices for products customers could buy cheaper from competitors. While there are some switching costs in terms of software, most products are easily substituted.

Supplier Power - Moderate

Brady's suppliers provide a mix of resale products and raw materials. Most suppliers do not depend on Brady's purchases due to its size, and Brady does not depend on just one supplier due to its global operations.

Buyer Power – Moderate

Brady's focus on customer satisfaction allows it to charge higher prices from the first sale and continues to do so throughout the relationship. Conversely, high customer satisfaction results from lowering prices for customers with a strong relationship with Brady.

Intensity of Competition – Relatively High

There are numerous national and international AIDC and safety product providers. It is assumed that AIDC competition will only increase in the future. However, Brady's diverse product offerings and global scale protects it against any one competitor taking all of its business.

Appendix 2: SWOT Analysis

Strengths	Weaknesses
High margins Experienced internationally Little need to reinvest in the business	Size of operations Lack of organic growth Dependent on external sources of growth
Opportunities	**Threats**
Online marketing AIDC market trends International expansion	International politics Currency fluctuations Increased competition

Appendix 3: Income Statement

Income Statement ($M)							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**E2022**	**E2023**
Revenue	$1,113	$1,174	$1,161	$1,081	$1,145	$1,291	$1,350
Cost of goods sold	555	586	582	553	583	662	686
Gross Margin	558	588	579	529	561	629	664
SG&A, R&D, D&A, and other	426	433	411	385	390	442	463
Earnings before interest & tax	132	155	167	143	171	187	201
Interest	6	3	3	2	0	1	1
Earnings before tax	127	152	165	141	171	186	201
Taxes	31	61	33	28	36	37	40
Income	96	91	131	113	135	149	160
Other income (expense)	-	-	-	0	6	-	-
Net income	96	91	131	112	130	149	160
Basic Shares	51.1	51.7	52.6	52.8	52.0	50.6	48.3
Fully Diluted Shares	52.0	52.5	53.3	53.2	52.4	51.0	48.7
EPS	$1.87	$1.76	$2.50	$2.13	$2.49	$2.94	$3.32
EPS Fully Diluted	$1.84	$1.73	$2.46	$2.11	$2.47	$2.92	$3.29
Dividends per share	$0.82	$0.83	$0.85	$0.87	$0.88	$0.92	$0.97

Appendix 4: Balance Sheet

Balance Sheet ($M)							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**E2022**	**E2023**
Cash	134	181	279	218	147	150	117
Operating assets ex cash	274	290	294	292	318	368	389
Operating assets	408	471	573	509	465	518	506
Operating liabilities	184	191	192	186	258	267	273
NOWC	224	280	382	324	208	251	233
NOWC ex cash (NWC)	90	99	102	106	60	101	116
NFA	642	586	584	633	913	929	900
Invested capital	$866	$866	$966	$957	$1,120	$1,179	$1,133
Total assets	$1,050	$1,057	$1,157	$1,142	$1,378	$1,447	$1,406
S-T and L-T debt and financing leases	$108	$53	$50	$0	$38	$67	$29
Other liabilities	58	61	65	94	119	122	125
Equity	700	752	851	863	963	990	979
Total supplied capital	$866	$866	$966	$957	$1,120	$1,179	$1,133
Total liabilities and equity	$1,050	$1,057	$1,157	$1,142	$1,378	$1,447	$1,406

Appendix 5: Sales Forecast

Sales ($M)							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**E2022**	**E2023**
Sales	$1,113	$1,174	1,161	$1,081	$1,145	$1,291	$1,350
Growth		*5.4%*	*-1.1%*	*-6.8%*	*5.9%*	*12.8%*	*4.6%*
ID Solutions	800	846	863	785	842	994	1,049
Growth		*5.7%*	*2.0%*	*-9.1%*	*7.2%*	*18.1%*	*5.5%*
% of sales	*71.9%*	*72.1%*	*74.4%*	*72.6%*	*73.5%*	*77.0%*	*77.7%*
Work Place Saftey	313	328	298	296	303	297	302
Growth		*4.7%*	*-9.2%*	*-0.4%*	*2.3%*	*-2.0%*	*1.5%*
% of sales	*28.1%*	*27.9%*	*25.6%*	*27.4%*	*26.5%*	*2.0%*	*22.3%*

Appendix 6: Ratios

Ratios							
Items	**2017**	**2018**	**2019**	**2020**	**2021**	**E2022**	**E2023**
Profitability							
Gross margin	50.1%	50.1%	49.9%	48.9%	49.0%	48.7%	49.2%
Operating (EBIT) margin	11.9%	13.2%	14.4%	13.2%	15.0%	14.5%	14.9%
Net profit margin	8.6%	7.8%	11.3%	10.4%	11.3%	11.5%	11.9%
Activity							
NFA (gross) turnover		1.91	1.98	1.78	1.48	1.40	1.48
Total asset turnover		1.11	1.05	0.94	0.91	0.91	0.95
Liquidity							
Op asset / op liab	2.22	2.47	2.99	2.74	1.81	1.94	1.85
NOWC Percent of sales		21.5%	28.5%	32.6%	23.2%	17.7%	17.9%
Solvency							
Debt to assets	10.3%	5.0%	4.3%	0.0%	2.8%	4.6%	2.1%
Debt to equity	15.4%	7.0%	5.9%	0.0%	3.9%	6.8%	3.0%
Other liab to assets	5.6%	5.8%	5.6%	8.2%	8.6%	8.4%	8.9%
Total debt to assets	15.8%	10.8%	9.9%	8.2%	11.4%	13.1%	11.0%
Total liabilities to assets	33.3%	28.8%	26.5%	24.5%	30.1%	31.5%	30.4%
Debt to EBIT	0.82	0.34	0.30	-	0.22	0.36	0.14
EBIT/interest	24.01	48.98	59.18	66.07	392.36	155.03	301.60
Debt to total net op capital	12.4%	6.1%	5.2%	0.0%	3.4%	5.7%	2.6%
ROIC							
NOPAT to sales	9.0%	7.9%	11.5%	10.6%	11.9%	11.6%	11.9%
Sales to NWC		12.43	11.53	10.38	13.78	16.04	12.44
Sales to NFA		1.91	1.98	1.78	1.48	1.40	1.48
Sales to IC ex cash		1.66	1.69	1.52	1.34	1.29	1.32
Total ROIC ex cash		13.1%	19.5%	16.0%	15.9%	14.9%	15.7%
NOPAT to sales	9.0%	7.9%	11.5%	10.6%	11.9%	11.6%	11.9%
Sales to NOWC		4.66	3.51	3.07	4.31	5.64	5.58
Sales to NFA		1.91	1.98	1.78	1.48	1.40	1.48
Sales to IC		1.36	1.27	1.13	1.10	1.12	1.17
Total ROIC		10.7%	14.6%	11.9%	13.1%	13.0%	13.9%
NOPAT to sales	9.0%	7.9%	11.5%	10.6%	11.9%	11.6%	11.9%
Sales to EOY NWC	12.38	11.86	11.33	10.21	19.02	12.81	11.62
Sales to EOY NFA	1.73	2.00	1.99	1.71	1.25	1.39	1.50
Sales to EOY IC ex cash	1.52	1.71	1.69	1.46	1.18	1.25	1.33
Total ROIC using EOY IC ex cash	13.6%	13.6%	19.4%	15.5%	14.0%	14.5%	15.8%
NOPAT to sales	9.0%	7.9%	11.5%	10.6%	11.9%	11.6%	11.9%
Sales to EOY NOWC	4.97	4.19	3.04	3.34	5.52	5.15	5.80
Sales to EOY NFA	1.73	2.00	1.99	1.71	1.25	1.39	1.50
Sales to EOY IC	1.29	1.36	1.20	1.13	1.02	1.09	1.19
Total ROIC using EOY IC	11.5%	10.7%	13.8%	12.0%	12.1%	12.7%	14.2%
ROE							
5-stage							
EBIT / sales		13.2%	14.4%	13.2%	15.0%	14.5%	14.9%
Sales / avg assets		1.11	1.05	0.94	0.91	0.91	0.95
EBT / EBIT		98.0%	98.3%	98.5%	99.7%	99.4%	99.7%
Net income /EBT		59.9%	79.7%	79.7%	75.8%	79.9%	79.9%
ROA		8.6%	11.9%	9.8%	10.3%	10.5%	11.2%
Avg assets / avg equity		1.45	1.38	1.34	1.38	1.45	1.45
ROE		12.5%	16.4%	13.1%	14.2%	15.2%	16.3%
3-stage							
Net income / sales		7.8%	11.3%	10.4%	11.3%	11.5%	11.9%
Sales / avg assets		1.11	1.05	0.94	0.91	0.91	0.95
ROA		8.6%	11.9%	9.8%	10.3%	10.5%	11.2%
Avg assets / avg equity		1.45	1.38	1.34	1.38	1.45	1.45
ROE		12.5%	16.4%	13.1%	14.2%	15.2%	16.3%
Payout Ratio		47.1%	34.1%	40.7%	35.3%	31.2%	29.1%
Retention Ratio		52.9%	65.9%	59.3%	64.7%	68.8%	70.9%
Sustainable Growth Rate		6.6%	10.8%	7.8%	9.2%	10.5%	11.5%

Appendix 7: Cash Flow Statement

Cash Flow Statement ($M)	2018	2019	2020	2021	E2022	E2023
Cash from Operatings (understated - depr'n added to net assets)						
Net income	91	131	112	130	149	160
Change in Net Working Capital ex cash	(9)	(3)	(3)	46	(41)	(15)
Cash from operations	82	128	109	175	108	145
Cash from Investing (understated - depr'n added to net assets)						
Change in NFA	57	2	(49)	(280)	(16)	29
Change in Marketable Securities	0	0	0	0	0	0
Cash from investing	57	2	(49)	(280)	(16)	29
Cash from Financing						
Change in Short-Term and Long-Term Debt	(55)	(2)	(50)	38	29	(38)
Change in Other liabilities	3	3	29	26	3	3
Change in Debt/Equity-Like Securities	0	0	0	0	0	0
Dividends	(43)	(45)	(46)	(46)	(46)	(47)
Change in Equity ex NI and Dividends	4	12	(54)	16	(75)	(125)
Cash from financing	(91)	(32)	(121)	34	(89)	(207)
Change in Cash	47	98	(61)	(70)	2	(33)
Beginning Cash	134	181	279	218	147	150
Ending Cash	181	279	218	147	150	117

Appendix 8: 3-stage DCF Model

3 Stage Discounted Cash Flow ($M)									
Sales Growth		*5.9%*	*12.8%*	*4.6%*	*5.0%*	*3.0%*	*5.0%*	*4.0%*	*2.0%*
NOPAT / S		*11.9%*	*11.6%*	*11.9%*	*12.4%*	*12.6%*	*12.8%*	*13.0%*	*13.0%*
S / NWC		*19.02*	*12.81*	*11.62*	*12.00*	*12.00*	*12.00*	*12.00*	*12.00*
S / NFA (EOY)		*1.25*	*1.39*	*1.50*	*1.52*	*1.54*	*1.56*	*1.58*	*1.60*
S / IC (EOY)		*1.18*	*1.25*	*1.33*	*1.35*	*1.36*	*1.38*	*1.40*	*1.41*
ROIC (EOY)		*14.0%*	*14.5%*	*15.8%*	*16.7%*	*17.2%*	*17.7%*	*18.2%*	*18.4%*
ROIC (BOY)			*15.4%*	*15.6%*	*17.3%*	*17.5%*	*18.4%*	*18.7%*	*18.5%*
Share Growth		*-1.4%*	*-2.8%*	*-4.5%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
			Year						
			1	2	3	4	5	6	7
		First Stage					**Second Stage**		
		2021	**E2022**	**E2023**	**E2024**	**E2025**	**E2026**	**E2027**	**E2028**
Sales	$1,081	$1,145	$1,291	$1,350	$1,418	$1,460	$1,533	$1,595	$1,626
NOPAT	$114	$136	$150	$161	$176	$184	$196	$207	$211
Growth		*18.7%*	*10.2%*	*7.5%*	*9.4%*	*4.7%*	*6.7%*	*5.6%*	*2.0%*
- Change in NWC		-46	41	15	2	4	6	5	3
NWC EOY	*106*	*60*	*101*	*116*	*118*	*122*	*128*	*133*	*136*
Growth NWC		*-43.2%*	*67.5%*	*15.3%*	*1.7%*	*3.0%*	*5.0%*	*4.0%*	*2.0%*
- Chg NFA		280	16	-29	33	16	35	26	7
NFA EOY	*633*	*913*	*929*	*900*	*933*	*948*	*983*	*1,009*	*1,016*
Growth NFA		*44.2%*	*1.8%*	*-3.1%*	*3.6%*	*1.7%*	*3.7%*	*2.7%*	*0.7%*
Total inv in op cap		234	57	-13	34	19	41	31	10
Total net op cap		973	1030	1016	1051	1070	1111	1142	1152
FCFF		($98)	$93	$174	$141	$165	$156	$176	$201
% of sales		*-8.6%*	*7.2%*	*12.9%*	*10.0%*	*11.3%*	*10.1%*	*11.0%*	*12.4%*
Growth			*-194.6%*	*87.5%*	*-18.8%*	*16.7%*	*-5.7%*	*13.0%*	*14.5%*
- Interest (1-tax rate)		0	1	1	1	1	1	1	1
Growth		*-80.0%*	*178.9%*	*-44.8%*	*5.0%*	*3.0%*	*5.0%*	*4.0%*	*2.0%*
FCFE w/o debt		($99)	$92	$173	$141	$164	$155	$175	$201
% of sales		*-8.6%*	*7.1%*	*12.9%*	*9.9%*	*11.3%*	*10.1%*	*11.0%*	*12.3%*
Growth			*-193.3%*	*88.8%*	*-18.8%*	*16.8%*	*-5.7%*	*13.1%*	*14.6%*
/ No Shares	52.8	52.0	50.6	48.3	48.3	48.3	48.3	48.3	48.3
FCFE		($1.89)	$1.82	$3.59	$2.91	$3.40	$3.21	$3.63	$4.16
Growth			*-195.9%*	*97.7%*	*-18.8%*	*16.8%*	*-5.7%*	*13.1%*	*14.6%*
* Discount factor			0.91	0.82	0.74	0.67	0.61	0.55	0.50
Discounted FCFE			$1.64	$2.94	$2.16	$2.29	$1.95	$2.00	$2.08
				Third Stage					
Terminal value P/E									
Net income		$130	$149	$160	$175	$183	$196	$207	$211
% of sales		*11.3%*	*11.5%*	*11.9%*	*12.4%*	*12.6%*	*12.8%*	*13.0%*	*13.0%*
EPS		$2.49	$2.94	$3.32	$3.63	$3.80	$4.05	$4.28	$4.36
Growth		*17.0%*	*17.9%*	*12.9%*	*9.4%*	*4.7%*	*6.7%*	*5.6%*	*2.0%*
Terminal P/E									22.00
* Terminal EPS									$4.36
Terminal value									$95.96
* Discount factor									0.50
Discounted terminal value									$47.93
Summary (using P/E multiple for terminal value)									
	First stage	$4.59	Present value of first 2 year cash flow						
	Second stage	$10.48	Present value of year 3-7 cash flow						
	Third stage	$47.93	Present value of terminal value P/E						
	Value (P/E)	**$63.00**							

Appendix 9: Comp Sheet

Comp Sheet

Ticker	Name	Current Price	Market Value	Price Change 1 day	1 Mo	3 Mo	6 Mo	52 Wk	YTD	Earnings Growth LTG	NTM	2020	2021	2022	2023	Pst 5yr	Beta	LT Debt Equity	S&P Rating	LTM Dividend Yield	Payout
BRC	BRADY CORP	$52.45	$2,719	0.4	(3.6)	1.2	(8.7)	17.3	(0.7)	9.3	31.0%	-14.2%	17.1%	18.1%	13.3%		0.80	9.4%	B-	1.76%	35.4%
ZBRA	ZEBRA TECHNOLOGIES CP -CL A	$588.29	$31,439	(1.5)	1.7	(0.4)	16.3	58.0	53.1	20.1	19.0%	-6.2%	66.3%	8.2%	15.2%		1.62	37.6%	C	0.00%	0.0%
DAL-IT	DATALOGIC SPA	$16.57	$938	(1.4)	(8.8)	(27.2)	(32.3)	7.1	4.9			-68.5%	179.3%	19.8%	11.3%		1.33	15.3%		1.15%	
MSA	MSA SAFETY INC	$142.50	$5,587	(0.5)	(6.6)	(12.1)	(15.6)	(3.7)	(4.6)	9.0	100.6%	-12.4%	1.6%	51.0%	17.7%		1.04	77.2%	B+	1.22%	74.0%
DOV	DOVER CORP	$167.01	$24,047	0.3	(1.8)	(4.5)	9.8	37.9	32.3	13.2	21.9%	2.0%	42.3%	12.1%	9.9%		1.40	78.6%	B+	1.21%	30.6%
AVY	AVERY DENNISON CORP	$205.66	$17,028	(1.7)	(5.3)	(8.9)	(6.2)	37.2	32.6	7.0	5.1%	85.2%	32.8%	9.8%	8.5%		0.86	155.6%	B+	1.30%	29.1%
Average			$13,626	(0.7)	(4.1)	(8.7)	(6.1)	25.6	19.6	11.7	35.5%	-2.4%	32%	19.8%	12.6%		1.17	43.6%		1.11%	33.8%
Median			$11,307	(1.0)	(4.5)	(6.7)	(7.5)	27.3	18.6	9.3	21.9%	-9.3%	37.6%	15.1%	12.3%		1.18	57.4%		1.22%	30.6%
SPX	S&P 500 INDEX	$4,538		(0.8)	(2.6)	0.1	8.2	23.8	20.8			-14.8%	44.3%	9.3%	10.0%						

Ticker	Website	ROE	P/B	2019	2020	2021	TTM P/E	NTM	2022	2023	NPM	P/S	NM	OM	ROIC	EBIT	P/Cf	NTM	STM Sales Growth	Pst 5yr	Equity
BRC	http://www.bradyid.com	15.7%	2.82	17.7	27.1	21.1	21.0	16.0	18.0	15.9	11.2%	2.37	11.3%	14.8%	13.5%	16.5	13.9	9.8%	3.4%		$18.61
ZBRA	http://www.zebra.com	31.9%	11.17	16.0	27.3	24.7	37.5	31.5	35.0	30.4	14.8%	5.59	11.3%	15.5%	16.3%	31.7	29.1	6.7%	6.6%		$52.68
DAL-IT	http://www.datalogic.com	12.1%	2.06	25.4	65.2	21.3	19.7		17.1	15.3	7.0%	1.44	2.8%	5.3%	2.8%	31.9	13.4				$8.05
MSA	http://www.msasafety.com	22.4%	6.81	27.1	41.4	48.0	60.6	30.2	30.4	25.9	8.8%	4.03	8.9%	15.1%	10.8%	29.4		8.0%			$20.93
DOV	http://www.dovercorporation.c	27.7%	6.18	15.4	24.5	18.6	25.7	21.1	22.3	20.3	12.3%	3.07	10.2%	14.7%	10.7%	21.5	19.5	5.9%	5.1%		$27.03
AVY	http://www.averydennison.com	44.4%	9.47	25.2	19.8	17.6	23.0	21.9	21.3	19.7	8.7%	2.04	8.0%	12.6%	17.2%	17.2	18.5	8.5%	4.2%		$21.72
Average		22.0%	6.42	21.1	28.0	25.2	25.4	24.2	24.0	21.2	10.5%	3.09	8.8%	13.0%	11.9%	24.7	18.9	7.8%	4.8%		
Median		25.1%	6.49	21.4	27.2	21.2	24.4	21.9	21.8	20.0	10.0%	2.72	9.6%	14.8%	12.1%	25.5	18.5	8.0%	4.6%		
SPX	S&P 500 INDEX			15.6	23.6	18.9			21.0	19.1											