

"I will tell you now that we have embraced the 21st century by entering such cutting-edge industries as brick, carpet, insulation and paint. Try to control your excitement."

-Warren Buffett, 2000 Berkshire Annual Letter¹

EXECUTIVE SUMMARY

During times when headlines are dominated by exciting tech companies like Lyft and emerging industries like cannabis, one can often find great deals where nobody is looking: boring companies that grow silently. Acuity Brands (NYSE:AYI), a lighting equipment manufacturer, is one such example.

My investment thesis can be summarized in one sentence: **In today's frothy market, there are few companies I am aware of that are trading at or near 2009 multiples despite demonstrating consistent top and bottom-line growth that outpaces competitors.** Based on a weighted average of relative, historic, and DCF analyses, I assign a 12-month price target of 191.

Long Runway for Growth Fueled by Consumer Appetite for Efficiency

AYI's products – including LED (light-emitting diode) lighting, building management systems (BMS), and internet-of-things (IoT) solutions – contribute to the continued endeavor towards energy efficiency. I expect this value proposition to align favorably with demand from activities including new building construction, upgrades to existing buildings, and upgrades to outdoor lighting (including infrastructure).

Market Dominance Protected by a Moat

With over 2 million SKUs across 25 brands², AYI boasts the largest product portfolio in the industry which it leverages through its market-leading 14-channel distribution network³. Furthermore, the Company maintains a historically strong, unlevered balance sheet that provides it with the ability to pursue value-adding acquisitions to maintain its position as the industry leader in both market share and product offerings.

Cheaper despite Stronger Performance

It is unusual for a company to trade at a discount while outgrowing its competitors on both the top and bottom line and generating superior margins, yet this appears to be the case for AYI. At 17.78x trailing earnings, AYI trades at levels not seen since 2009 and briefly in 2011 (see Exhibit 1.1), and at a significant discount to the 10 year average PE of 26.84x.

Mr. Graham Would Likely Have Approved

Acuity Brands features several key characteristics that Mr. Graham sought in his own investments⁴, including:

- a track record of earnings that have remained positive through the 2008 Recession and have grown continuously since (see Exhibit 1.2);
- low overall debt that continues to shrink relative to total assets (see Exhibit 1.3);
- a Current Ratio of 2.11 > 2.00;
- working capital exceeding long-term debt;
- ...and an adequate size of enterprise at \$5.8 billion.
- (At the time I began this report, the price/earnings ratio was about 14x, putting it under the 15x hurdle.)

As Would Mr. Buffett

In addition to the above criteria, AYI also satisfies a number of Mr. Buffett's core tenets, including:

- being a simple, understandable, and perhaps even boring business of making and installing light fixtures;
- having a long runway for continued growth;
- being led by an experienced, capable management team;
- boasting industry-leading margins and ROE that both continue to improve (see Exhibits 1.4 and 1.5);
- trading at a discount to the market despite a track record of outgrowing it.



Ticker	NYSE:AYI
Stock price (5/10/19 close)	143.55
Price Target	\$191
Upside	33%
52-Week Range	\$103.48 - \$173.01
50-DMA	132.47
200-DMA	125.17
EPS	8.15
P/E	17.6x
Market Cap	5.73B
Shares Outstanding	39,907,000
Short Interest	4.58%
5Y Beta	1.08
Stock price when picked	125.56
Upside when picked	52%
Stock price when finalized	130.63
Upside when finalized	46%

COMPANY PROFILE

Acuity Brands, Inc. (NYSE:AYI) is the North American market leader of lighting and building management solutions for commercial, industrial, residential, institutional and infrastructural applications. Incorporated in 2001 as a spinoff of the lighting equipment and specialty chemical unit of National Service Industries⁵, Acuity now operates 19 facilities across North America and Europe, employing over 13,000 people across these regions.⁶

Products that Reflect Market Demand

As the world shifts more toward energy-efficiency, AYI both adapts and capitalizes through a combination of acquisitions (see Exhibit 2.1) and in-house product development. Ten years ago, 95% of the Company’s product offerings were based on conventional (incandescent, fluorescent, etc.) technologies⁷; **today, two-thirds of Acuity’s business comes from sales and installation of LED lighting⁸**, which has enjoyed an immense tailwind as consumer demand for cleaner and greener lighting intersected with the recovering economy.

Acuity's Brand Portfolio



AYI does not break down its business into reporting segments, instead categorizing 99% of its sales as “lighting and building management solutions” and the rest as “services.”⁹ AYI’s broad portfolio of products includes lighting fixtures (luminaires), lighting controls, lighting components, power supplies, skylights, and integrated building management systems (BMS). These products include LED, fluorescent, incandescent, metal halide, high intensity discharge, and more recently OLED (organic LED) technologies. In recent years, the company has increased its focus on expanding its BMS portfolio, including software and services that help utilize the power of the internet of things (IoT) to deliver “smart” solutions that both monitor light levels and optimize power usage for buildings, cities, and the grid.

Solutions and Applications

Lighting			Building	Services
Indoor	Outdoor	Controls		
<ul style="list-style-type: none"> General Purpose Architectural Downlighting Track Lighting Emergency Relight Rough Service Surface Flexible Wiring 	<ul style="list-style-type: none"> Area & Parking Roadway & Street Floodlighting Security Sports High-Mast Relight Rough Service Surface Flexible Wiring 	<ul style="list-style-type: none"> In-wall & In-fixture controls Networked wired & wireless Panels & Basic Switch gear Design, Start-Up, Service Contracts 	<ul style="list-style-type: none"> Controllers Supervisory Controls (includes software) Peripherals (Sensors) 	<ul style="list-style-type: none"> Commissioning Project Management Apps Cloud Services Analytics Indoor positioning

Key Verticals



A Diverse North American Customer Base

North America represented 97% of total sales (about 90% of which was US-based), which amounted to \$3.7 billion in FY18. Customers include home improvement retailers, electric utilities, energy service companies, utility distributors, wholesalers, the government, municipalities, and original equipment manufacturers located in North America and select international markets serving new construction, renovation, and maintenance and repair applications. No customer accounted for over 10% of sales in FY18, although Home Depot made up over 10% of sales in FY14 and some years prior¹⁰. Sales are generated through various sales channels including an internal sales force and outsourcing.

Investments into Future Growth

Acuity continues to invest in both the improvement of current products' energy-efficiency and the development of new areas including the "internet of things" (IOT), organic LED lighting (OLED), and even the development of LED lights attuned specifically for horticulture through a joint venture with Rensselaer Polytechnic Institute.¹¹



IOT relates to the wireless interconnection of devices through the internet, enabling not only the ability to send and receive but to store and analyze data in real-time (see Exhibit 2.2). This emerging technology can reduce the cost of building management systems by around 30%¹², substantially improving their value proposition to a wider market. This is largely because traditional BMS were expensive to install and typically required maintenance work to be performed by trained technicians; newer IOT-based BMS leverage wireless connectivity and internet-accessible interfaces to circumvent much of these costs.

OLED lighting offers some novel benefits that compliment LED lighting; namely, while LED light is focused, hot, and very bright, OLED light is cool, safe, diffusive, and can be spread over large surface areas (see Exhibit 2.3). This provides glare-free direct light as well as many design applications (see Exhibit 2.4). Because OLED is a fairly new technology, it faces challenges in reducing cost for effective commercialization, although the US DOE projects significant cost reductions by 2025 (see Exhibit 2.5).¹³

Indoor horticultural lighting is a budding field that is enhanced by the advent of LED lighting, which offers a wider spectrum of photosynthesis-inducing light at greater efficiency (see Exhibits 2.6 and 2.7)¹⁴. AYI has partnered with Rensselaer Polytechnic Institute to "develop light protocols for specialized LED lighting with integrated feedback for efficient plant growth."¹⁵ These systems would allow indoor greenhouses to monitor plants throughout their stages of growth, from germination to vegetation and flowering, adjusting the light frequencies to optimize efficient growth.

For fiscal 2018, 2017, and 2016, research and development expense totaled \$63.9 million, \$52.0 million, and \$47.1 million, respectively.¹⁶

Experienced and Disciplined Management

Acuity Brands is led by an experienced executive team that has a demonstrated track record of outperforming both competitors and the industry at large through a disciplined approach toward shareholder value creation. As chairman and CEO Vern Nagel stated on the Q2 earnings call, the "three elements of [Acuity's] overall shareholder value creation strategy is to continue to drive the financial performance of our business, acquisitions, and return of capital through share repurchases." Indeed, we see from Exhibit 2.8 that the Company has engaged in stock buybacks only when shares are falling or at depressed levels; conversely, when the stock performs well, the Company issues shares both as part of performance-based bonuses and in order to fund acquisitions. This suggests competent financial stewardship. Finally, the board of directors (see Exhibit 2.9) is comprised entirely of independent board members with the exception of Nagel. Executive salaries are pinned to stock performance (see Exhibit 2.10).

“Charlie and I continue to believe that short-term market forecasts are poison and should be kept locked up in a safe place, away from children and also from grown-ups who behave in the market like children.”

-Warren Buffett, 1992 Berkshire Annual Letter¹⁷

INDUSTRY OVERVIEW

The lighting industry manufactures electric lighting fixtures, components, and nonelectric lighting equipment such as lampshades, for both indoor and outdoor applications including infrastructure. With an **estimated North American addressable market of over \$20 billion** and FY18 revenue of \$3.68 billion, Acuity maintains a roughly **18% market share** based on its FY18 total revenue of \$3.68 billion, leading in 6 of 8 key categories¹⁸.

Sales are largely tied to economic trends, most notably rates of new building construction. From 2013 to 2018, the industry enjoyed a healthy 3.4% annual growth rate¹⁹ (during which AYI grew its top-line by 12.5% annually and gained market share, see Exhibit 3.1). However, in recent years fears of a US real estate slowdown have lowered growth projections to just 0.8% annually through 2023²⁰.

Compounding matters, in 2018 a 10% tariff was placed on many Chinese imports including finished lighting goods, components, and materials. The tariffs were then increased to 25% on May 10, though there appears to be some expectation that a resolution could be reached in the coming weeks.²¹ Previously, the Trump administration had extended the so-called deadline on multiple occasions to continue negotiations, demonstrating the willingness and desire to reach an agreement.²²

The Growing Drive Towards Going Green

Despite these ongoing concerns, the growing drive toward energy efficiency remains a powerful tailwind. **LED-based lighting solutions currently require about 85% less energy** to operate than traditional lights, and as the technology improves that percentage continues to rise.²³ In 2016, the city of Providence began upgrading its sodium-vapor streetlights to LED, which reduced their annual maintenance costs from \$2.35 million to \$480,000 – nearly 80% in savings.²⁴ As the cost of LED components continues to come down²⁵, the decision for cities across the nation (and the world) to upgrade becomes increasingly clear, as evidenced by Google search trends for “LED lights.”

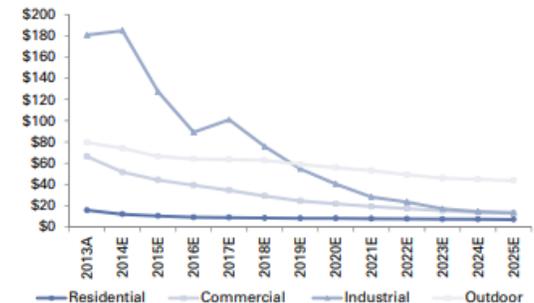
Furthermore, as environmental issues gain a greater presence in the consciousness of society, governments around the world have increased their efforts to reduce the output of carbon emissions. With electricity consumption accounting for an estimated one-third of total emissions (see Exhibit 3.2), many countries including the US (have already enacted policies to ban or phase out the use of incandescent bulbs, accelerating global adoption and market penetration of LED-based lights (see Exhibits 3.3, 3.4, and 3.5).²⁶

As LED efficiency continues to improve (see Exhibit 3.6)²⁷, continued upgrades to existing buildings present an estimated \$500 billion opportunity, as recently noted by Nagel.²⁸



Exhibit 29: ...and sharp cost reductions...

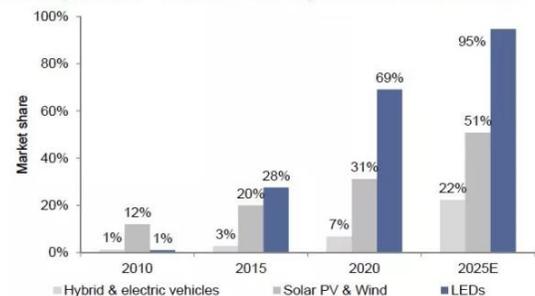
Sharp cost declines make LEDs increasingly competitive with alternatives such as CFLs and LFLs



Source: Goldman Sachs Global Investment Research.

Exhibit 19: The rapid adoption of LEDs in lighting marks one of the fastest technology shifts in human history.

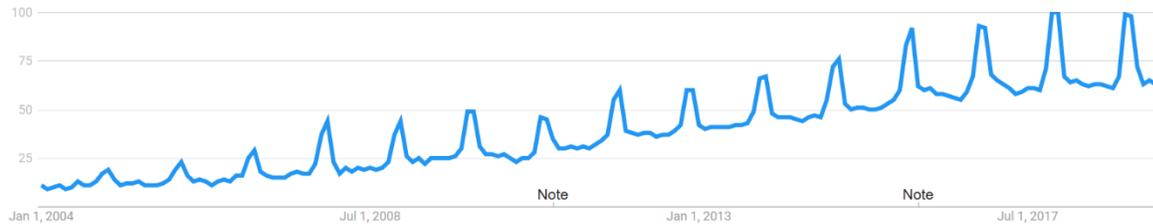
LEDs for general lighting were commercialized only recently, but will dominate sales by the end of this decade



Source: IHS, Company data, IEA, IRENA, BP, Goldman Sachs Global Investment Research.

Google Searches for "LED lights"

Interest over time ?



Source: Google Trends

And Last but Not Least, the Industry is NOT on a Direct Collision Course with Amazon

Unlike some attention-grabbing companies out there like Blue Apron and Wayfair, Acuity is involved in the somewhat boring business of manufacturing and installing lighting fixtures in buildings. This business is one that does not synergize particularly well with Amazon's sprawling logistical network or its vast collection of consumer purchase data. As such, they appear to be safe from colliding with the unstoppable force that is Amazon – a surefire way to destroy margins – for the foreseeable future.

Porter's 5 Forces

Bargaining Power of Suppliers - Moderate

The tariffs caused component and finished goods prices to spike, causing gross margins to contract by an estimated 200 basis points in 4Q18.²⁹ Because Acuity maintains a leading market position, suppliers depend on AYI to contribute a significant portion of their business. As such, AYI maintains a fair amount of negotiating leverage with its suppliers. CEO Vern Nagel noted in the 4Q18 conference call that the Company was exploring ways to mitigate the impact of the tariffs including "finding alternative, non-Chinese suppliers and in-sourcing the production of certain products."³⁰

Bargaining Power of Buyers – Moderate

Acuity managed to offset some of the rising input costs by raising prices 6% midway through 1Q19³¹, reducing the rate of gross margin contraction to 170 basis points in 1Q19 and 110 basis points in 2Q19. This suggests that AYI has reasonable influence when negotiating with its customers – none of whom currently account for over 10% of total sales.

Threat of New Entrants – Low

High barriers to entry – namely the need to form distribution channels as well as high capital and fixed asset costs – keep the lighting industry relatively unfriendly to new entrants. In addition, the complexity of the supply chain (see Exhibit 3.7) makes it extremely difficult for new entrants to compete with existing market leaders when securing the various raw materials, components, and finished goods.

Threat of Substitutes – Low

Acuity has shown versatility in the past by adjusting its product portfolio to meet market demands, including sun-diffusing skylights. As such, the risk of a new light-source causing lasting disruption to the Company's operations is minimal.

Intensity of Rivalry – Moderate/High

Nagel noted in 4Q18 that top-line sales were negatively impacted by "increased competition, primarily for more basic, less-featured products."³² Furthermore, as companies in this space continue to acquire startups in the IOT and software spaces, we may see competitive bidding activity (see supplementary sheets in attached Excel file). Despite these factors, Acuity maintains its position as the market leader and has been able to leverage that advantage to superior performance, as detailed in the Financial Analysis section.

Market Share

N.A. Lighting Market Share

Fixtures

Commercial	#1
Outdoor	#1
Residential	Top 4
Industrial	#1

Controls

Commercial Lighting	#1
Emergency	#1
Indoor Positioning	#1



THE OTHER GUYS

As Acuity continues to take market share and outperform its rivals across multiple metrics, several of its closest publicly traded competitors appear to be bowing out.

Hubbell: Slowly Shifting Away

Hubbell (NYSE:HUBB) reports in two segments: electrical (59.4%) which competes directly with Acuity, and power (40.6%) which supplies parts to utility companies. In 2015, the power segment accounted for only 29.6%, rising each consecutive year as a percent of total sales, suggesting that HUBB will become less and less of a direct competitor in years to come. However, HUBB has also been acquiring companies in the BMS space, including Aclara last year.³³ Like AYI, around 90% of HUBB’s sales come from the US.

4/25/2019	AYI	HUBB	LIGHT	ETN	CREE
Gross Margin	39.4%	28.0%	38.8%	32.8%	32.7%
EBIT Margin	11.3%	11.9%	5.5%	14.2%	1.8%
Net Margin	9.5%	8.0%	4.2%	9.9%	-18.7%
ROE	20.7%	21.0%	11.9%	12.9%	-13.1%
ROA	11.9%	8.4%	4.2%	6.7%	-10.6%
ROIC	20.7%	15.3%	6.3%	11.1%	-3.4%
Sales 5Y CAGR	11.1%	7.1%	-0.60%	-0.4%	0.7%
EPS 5Y CAGR	21.1%	-0.6%	13.00%	4.6%	N/A
FCF 5Y CAGR	15.7%	5.6%	N/A	7.7%	-56.3%

Signify: Son of Philips

5 years ago, Dutch powerhouse Koninklijke Philips spun off its lighting segment as Signify (AMS:LIGHT). As a standalone, Signify is a closer competitor to Acuity than its former parent, but its business operations are mostly based internationally with only 28% of sales coming from the Americas. As such, we view LIGHT less as a direct competitor and more as an industry proxy.

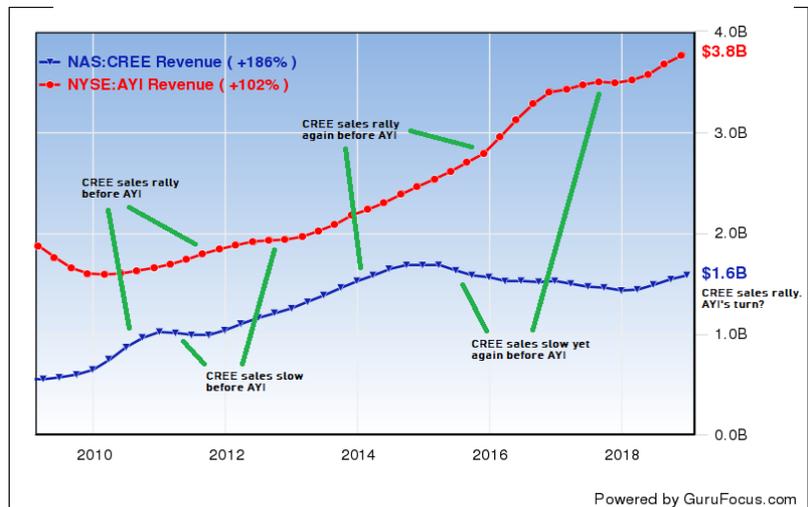
Today we’re announcing plans to spin off our Lighting business and divest our Automotive Fluid Conveyance business

	Lighting \$1.7B of sales	Automotive Fluid Conveyance \$150M of sales
Timing / process	<ul style="list-style-type: none"> Spin-off Expected to close by the end of 2019 	<ul style="list-style-type: none"> Sale expected to close by the end of 2019
Business overview	<ul style="list-style-type: none"> A leading global provider of LED lighting solutions An extensive product portfolio Differentiated sales network with market leading relationships Growth driven by increase in connected and intelligent solutions, along with growing complexity and technical requirements U.S. offices in Atlanta, GA, and ~5,000 employees worldwide Plan to domicile in Ireland Currently reported in Eaton's Electrical Products segment 	<ul style="list-style-type: none"> Manufacturer of power assisted steering lines, air conditioning lines, active ride suspension lines, and plastic engine components ~1,350 employees spread across facilities in Germany, UK, Czech Republic, and China Serving global light and commercial vehicle OEMs Global manufacturing footprint Currently reported in Eaton's Vehicle segment
Rationale	<ul style="list-style-type: none"> Ability for Lighting to prioritize and fund its growth initiatives Margin performance is dilutive 	<ul style="list-style-type: none"> Set of products where we are not a market leader Business doesn't align well with our portfolio criteria Margin performance is dilutive

Eaton: Throwing in the Towel?

In March, Eaton (NYSE:ETN) announced that they were spinning off their \$1.7 billion lighting unit, which had badly lagged competitors and company benchmarks, into its own publicly traded company. ETN explained that weak segment margins were key drivers for the spinoff,³⁴ suggesting that this unit may be shopped to another lighting company that could better leverage their operations and improve the standalone’s margins.

Eaton announces it will spin off its Lighting business by the end of 2019



Cree: Out of the Picture

In March, Cree (NASDAQ:CREE) announced that it would be divesting and selling its lighting unit to privately-owned Ideal Industries³⁵, and as such the company no longer competes directly with Acuity. Gross margins for the unit had fallen from 28% in FY17 to just 19% in FY18 (compared to AYI’s 39%). Roughly half of Cree’s remaining business involves selling LED components, with the other half involving RF power and semiconductor components. This gives us somewhat of a proxy for general LED lighting demand, though we will not use CREE in our relative valuation model (see “Valuation” section).

“References to EBITDA make us shudder – does management think the tooth fairy pays for capital expenditures?”
 -Warren Buffett, 2000 Berkshire Annual Letter³⁶

FINANCIAL ANALYSIS

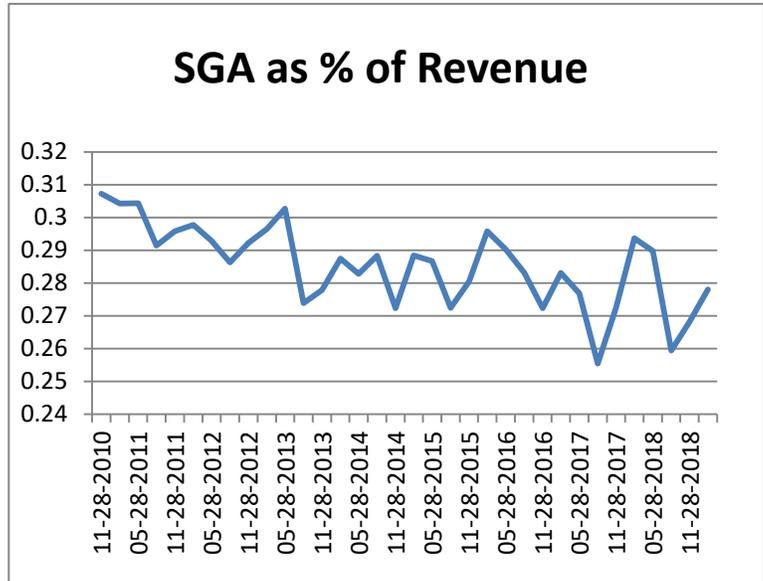
Continued Top-Line Growth

Since the Recession, Acuity has grown its top-line revenue consistently despite some occasional headwinds including the recent tariffs. A surge in sales in late 2018 can be attributed to customers buying in advance after the Company announced planned 6% price hikes in response to the China tariffs.³⁷ The most recent quarter exhibited a relatively tepid growth rate of 2.7%, as it was the first quarter with the full effects of both the 6% price hikes and the 10% tariffs. Growth can be broken down to volume and the pricing mix of products sold. Volume has continued to grow as AYI continued to aggressively expand its distribution channels.³⁸ However, due to a softening macroeconomic outlook in recent years, the average selling prices of units sold has decreased as customers opt for lower-priced products.

Throughout the years, acquisitions have also played a major role in both top-line growth and product portfolio expansion. Nagel noted at the Oppenheimer Industry Conference in May that in the past 12+ years, the Company had spent approximately \$1.3 billion toward acquisitions to build out their “connected portfolio,” which he believes contributed to continued growth while other players in the industry have been forced to seek strategic alternatives.³⁹

Stabilizing Margins

As lower ASPs combined with rising costs (see Exhibit 4.1) due to inflationary pressures including wage hikes in a tighter labor market,⁴⁰ AYI’s gross margin has diminished since 2016. However, the Company has managed to reduce its selling, general and administrative expenses over time thanks to continued infrastructural improvements, mitigating the impact to their operating margin. In fact, in 2Q19 the Company announced that its operating margin had reversed course and improved by 40 basis points thanks to successful cost-cutting measures (see Exhibit 4.2).⁴¹ Furthermore, it appears that the downshift in price/mix has decelerated, as shown to the right.



Quarter	Est. Volume	Est. Price/Mix	Quarter	YoY Sales
Q2 19	3.3%	-0.6%	Q2 19	2.7%
Q1 19	11.8%	-1.0%	Q1 19	10.7%
Q4 18	13.2%	-2.8%	Q4 18	11.0%
Q3 18	10.4%	-4.9%	Q3 18	5.9%
Q2 18	6.0%	-2.5%	Q2 18	3.4%
Q1 18	0.0%	-1.0%	Q1 18	-1.0%
Q4 17	4.5%	-1.0%	Q4 17	3.5%
Q3 17	6.0%	-0.9%	Q3 17	5.0%
Q2 17	4.8%	-1.2%	Q2 17	3.5%
Q1 17	9.5%	-2.1%	Q1 17	16.0%
Q4 16	13.0%	-3.0%	Q4 16	21.3%
Q3 16	16.5%	-2.7%	Q3 16	25.0%
3Y Avg	8.3%	-2.0%		

Price hikes go into effect throughout Q1
 Price-hike announced in mid Q4
 Boost from acquisition of Juno Lighting

Source: AYI Company Press Releases

Unlevered Balance Sheet = Financial Ammunition

Acuity maintains a disciplined balance sheet with low debt that can be paid off with approximately one year’s free cash flow. This provides it with the latitude both to pursue meaningful acquisitions without overleveraging and to buy back stock when shares are undervalued. As previously shown in Exhibit 2.8, the Company appears to be doing just that, issuing buybacks as shares were discounted by the market. It is worth noting that a reckless policy of share buybacks at inopportune times can be dilutive to shareholder value, and that AYI appears to be well aware of this concept based on the historical timing of their repurchases. It is also worth reiterating that AYI’s total liabilities as a percent of total capitalization has been steadily decreasing, as shown in Exhibit 1.3. With a current ratio of 2.11, AYI has virtually no risk of immediate default (see Exhibit 4.3).

Sweet Synergies

The Company also made several acquisitions over the past few years (refer to Exhibit 2.1). One notable acquisition was LED lighting specialist Juno in late 2015 for \$385 million.⁴² Juno had been generating around \$250 million in annual revenue, yet after the deal, Acuity’s growth attributable to acquisitions rose from 3% in Q1 to 11% in Q2, suggesting roughly 8% of growth from Juno. Based on the \$2.7 billion in sales AYI had been doing the prior year, this translates to over \$200 million of accretive revenue growth for that quarter alone, suggesting that the Company was able to generate significant synergy in this particular acquisition. As previously noted, competitors are leaving this space and industry consolidation appears to be inevitable. AYI should be able to capitalize on this trend.

Enviably Performance Metrics

Throughout the years, Acuity has consistently managed to improve both its return on equity as well as its return on assets and return on invested capital, as shown in the previous section. This was achieved through a diligent scaling of operations and accretive acquisitions like Juno that allowed them to lower unit fixed costs while continuing to generate revenue expansion.

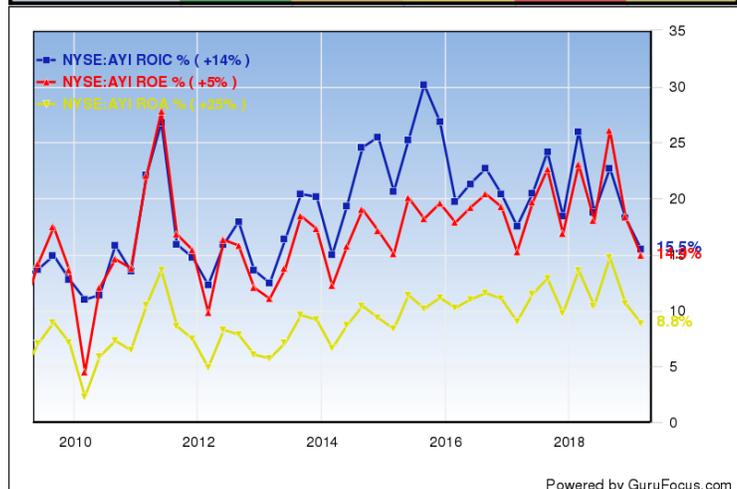
The Bottom Line

Industry-crushing top-line growth combined with share buybacks resulted in EPS growth at a whopping 21.1%, while generating free cash flow per share growth of 15.7% over the past 5 years – even while operating margins were being compressed. This suggests that once AYI’s margins stabilize as they appear to be doing, we could see accelerated EPS growth. Both figures already massively outperform those of competitors.

A Pessimistic Stock

Given these desirable characteristics and its superb track record, one would expect shares of AYI to be priced at a premium, at least relative to its competitors. However, due to a combination of housing slowdown and tariff fears, the stock price has been cut roughly in half since 2016. This presents us with an opportunity, as detailed in the next section.

4/26/2019	AYI	HUBB	ETN	CREE	LIGHT
DSO	54.47	60.11	66.48	48.91	71.59
DIO	73.04	76.86	72.56	127.76	84.39
DPO	61.55	47.23	58.08	58.45	77.16
CCC	65.96	89.74	80.96	118.22	78.82



*"Whether we're talking about socks or stocks, I like buying quality merchandise when it is marked down."
-Warren Buffett, 2008 Berkshire Annual Letter⁴³*

VALUATION

To arrive at my 12-month **price target of \$191**, I have performed historical, relative, and DCF analyses and averaged their respective conclusions.

Historical Valuation Model

In this model, I have calculated the 1-year, 5-year, and 10-year daily averages for the following ratios:

- 1) Price to Sales, the most stable and least volatile of the valuation metrics;
- 2) Price to Earnings, the traditional measurement of stock price versus bottom line earnings per share;
- 3) Price to Free Cash Flow, arguably the most important metric and Mr. Buffett's preferred;
- 4) EV to EBIT, which factors into account each company's net cash position relative to its operating income (we already have FCF as a metric, and so we can avoid using EBITDA for our model).

From there, I have averaged the 1, 5, and 10 year terms to get a final average of **\$185.50**.

Average PS over last year	1.44	
Upside (down)	-6.7%	135.69
Average PS over last 5 years	2.48	
Upside (down)	61.3%	234.65
Average PS over last 10 years	1.92	
Upside (down)	25.0%	181.87
1, 5, 10 Avg	1.95	
Upside (down)	26.5%	184.07
		Price Target
Current PS	1.54	
Stock Price	145.5	

Average PE over last year	15.41	
Upside (down)	-11.8%	128.31
Average PE over last 5 years	29.55	
Upside (down)	69.1%	245.98
Average PE over last 10 years	26.87	
Upside (down)	53.7%	223.65
1, 5, 10 Avg	23.95	
Upside (down)	37.0%	199.31
		Price Target
Current PE	17.48	
Stock Price	145.5	

Average PFCF over last year	15.99	
Upside (down)	-13.3%	126.10
Average PFCF over last 5 years	29.27	
Upside (down)	58.7%	230.86
Average PFCF over last 10 years	25.50	
Upside (down)	38.2%	201.10
1, 5, 10 Avg	23.59	
Upside (down)	27.8%	186.02
		Price Target
Current PFCF	18.45	
Stock Price	145.5	

Average EV/EBIT over last year	11.53	
Upside (down)	-8.8%	132.72
Average EV/EBIT over last 5 years	17.79	
Upside (down)	40.7%	204.76
Average EV/EBIT over last 10 years	15.85	
Upside (down)	25.4%	182.48
1, 5, 10 Avg	15.06	
Upside (down)	19.1%	173.32
		Price Target
Current EV/EBIT	12.64	
Stock Price	145.5	

Margin of Safety (for Historical Valuation)

In calculating our price targets, I have put extra weighting in the most recent trailing 1 year period, when multiples for AYI were depressed, substantially lowering our price targets across the board. This is despite my view that the most recent 1 year period is arguably the most irrelevant as I believe the stock was severely mispriced in that time frame. Notably, based on each of these multiples, AYI is trading at significant discounts to its 5-year and 10-year norms.

Relative Valuation Model

For this model, I have taken our competitors and their respective Price to Sales, Price to Earnings, Price to FCF, and EV to EBIT multiples. Creating a grid, we see that AYI is priced at a relative discount except to LIGHT (Signify), which is currently priced low due to underperforming sales.

4/26/2019	AYI	HUBB	ETN	CREE	PHG	LIGHT
Price/Sales	1.22	1.28	1.41	2.74	1.56	0.4
Price/Earnings	17.48	19.22	17.34	N/A	25.44	15.43
Price/FCF	15.85	15.56	16.94	N/A	162.24	43.12
EV/EBIT	10.24	13.44	12.92	N/A	15.89	9.44

From there, I have averaged the competitors' multiples and derived values for AYI based on those calculated multiples before finally averaging the derived values to arrive at **\$195.12**. Because Signify is a recent spinoff of Philips, I have averaged their multiples and factored them as one company, except in the price to free cash flow calculation where we simply threw out PHG's P/FCF multiple of 162.24, thereby adding to our margin of safety.

Stock Price (4/26/2019)		145.8	
Average	Upside	Isolated PT	Comment
1.60	31.4%	191.51	Because LIGHT is a recent spinoff of PHG, we have averaged their figures and weighted them as one.
20.61	17.9%	171.90	For N/A values due to negative earnings/free cash flow/EBIT, we have substituted the next highest value (adding to our margin of safety for this model).
25.21	59.0%	231.87	We have thrown out the N/A and 162.24 values, adding to our margin of safety for this model.
13.01	27.0%	185.22	For N/A values due to negative earnings/free cash flow/EBIT, we have substituted the next highest value (adding to our margin of safety for this model).
Average PT		195.12	

Margin of Safety

I believe that **due to Acuity's history of outperforming its rivals on almost every front – including growth, margins, and ROE – valuing AYI in line with its competitors affords it a robust margin of safety**. Additionally, in determining the weighted average multiples, I have removed values deemed to be excessive, as noted in the table above. Finally, despite free cash flow being the preferred metric and providing us with the greatest isolated price target, I have elected to average it with the lower figures from the other metrics.

4/25/2019	AYI	HUBB	LIGHT	ETN	CREE
Gross Margin	39.4%	28.0%	38.8%	32.8%	32.7%
EBIT Margin	11.3%	11.9%	5.5%	14.2%	1.8%
Net Margin	9.5%	8.0%	4.2%	9.9%	-18.7%
ROE	20.7%	21.0%	11.9%	12.9%	-13.1%
ROA	11.9%	8.4%	4.2%	6.7%	-10.6%
ROIC	20.7%	15.3%	6.3%	11.1%	-3.4%
Sales 5Y CAGR	11.1%	7.1%	-0.60%	-0.4%	0.7%
EPS 5Y CAGR	21.1%	-0.6%	13.00%	4.6%	N/A
FCF 5Y CAGR	15.7%	5.6%	N/A	7.7%	-56.3%

Discounted Cash Flow Model

For our DCF model, I have used the following assumptions:

- to calculate WACC, I have assumed an expected market return of 8.00% and a post TCJA tax rate of 21%;
 - our risk-free rate is the US 10Y Treasury rate of 2.531% (as of 4/25/19);
 - AYI's current 5-year beta (we use 5-year beta due to our long-term outlook) is 1.08 (sourced from Merrill);
- Based on these assumptions, I have calculated a WACC of 8.00% and a DCF value of **\$191.50**.

With regards to volume and pricing growth, I have modeled in the expectation of slowing volumes and pricing pressure amid expected headwinds, which I view as temporary. I expect pricing (and subsequently gross margins) to stabilize by FY2020 as the political climate cools. In the unlikely event that the tariffs get lifted or raised to 25%, we could see aggressive margin expansion or contraction, respectively. It is worth noting that a 25% tariff would not be fully absorbed by the Company, as they have already begun "engaging alternative non-Chinese suppliers"⁴⁴ in the event that disaster strikes. I have accordingly capped our worst-case scenario for COGS at 64%.

Operating Assumptions							
REVENUE BUILD UP							
Volume Growth			2019	2020	2021	2022	2023
	1	Management Case	7.0%	7.0%	7.0%	7.0%	6.5%
	2	Base Case	3.5%	4.0%	4.5%	5.0%	5.0%
	3	Downside Case	2.0%	2.0%	2.0%	2.0%	2.0%
Active Case		Base Case	3.5%	4.0%	4.5%	5.0%	5.0%
Price Growth			2019	2020	2021	2022	2023
	1	Management Case	0.0%	1.0%	2.0%	3.0%	3.0%
	2	Base Case	(1.0%)	0.0%	1.0%	2.0%	2.0%
	3	Downside Case	(2.0%)	(1.0%)	0.0%	1.0%	1.0%
Active Case		Base Case	(1.0%)	0.0%	1.0%	2.0%	2.0%
Revenue Growth			2019	2020	2021	2022	2023
Active Case		Base Case	2.5%	4.0%	5.5%	7.1%	7.1%
COGS %							
	1	Management Case	58.6%	58.0%	57.4%	57.0%	56.8%
	2	Base Case	59.6%	59.2%	58.8%	58.6%	58.4%
	3	Downside Case	64.0%	64.0%	64.0%	64.0%	64.0%
Active Case		Base Case	59.6%	59.2%	58.8%	58.6%	58.4%
SG&A %							
	1	Management Case	26.8%	26.6%	26.5%	26.5%	26.5%
	2	Base Case	27.1%	26.9%	26.8%	26.8%	26.8%
	3	Downside Case	27.4%	27.2%	27.2%	27.2%	27.2%
Active Case		Base Case	27.1%	26.9%	26.8%	26.8%	26.8%
Capex							
	1	Management Case	57	59	62	66	71
	2	Base Case	60	62	65	68	72
	3	Downside Case	62	65	68	71	75
Active Case		Base Case	60	62	65	68	72

Margin of Safety

Considering that Acuity has managed to vastly outperform the industry's growth rate over the past 10+ years, I believe it is conservative to model only a 3% terminal revenue growth rate. Furthermore, although the Company does not give specific forward guidance figures, my estimated EPS figures come significantly below analyst consensus estimates through 2020. Interestingly, CFRA has even higher EPS estimates despite a price target of just \$125.

Yearly Earnings Forecasts

Fiscal Year End	Consensus EPS* Forecast
Aug 2019	8.84
Aug 2020	9.49

Source: NASDAQ

Revenue/Earnings Data

Revenue (Million USD)					
	1Q	2Q	3Q	4Q	Year
2019	933	854	--	--	--
2018	843	832	944	1,061	3,680
2017	851	805	892	958	3,505
2016	737	778	852	925	3,291
2015	647	616	684	760	2,707
2014	575	546	604	669	2,394

Earnings Per Share (USD)

	1Q	2Q	3Q	4Q	Year
2020	E 2.44	E 2.06	E 2.78	E 3.21	E 10.49
2019	1.98	1.67	E 2.31	E 2.77	E 9.39
2018	1.70	2.33	1.80	2.69	8.52
2017	1.86	1.53	1.90	2.16	7.43
2016	1.57	1.49	1.69	1.89	6.63
2015	1.17	1.07	1.48	1.37	5.09

Fiscal year ended Aug 31. Next earnings report expected: Late Jun. EPS Estimates based on CFRA's Operating Earnings; historical GAAP earnings are as reported in Company reports.

Price USD 142.44 (as of Apr 18, 2019 4:00 PM ET) **12-Mo. Target Price** USD 125.00

Source: CFRA (S&P Global)

Summary Financial Results

	Historical					Projected		
	2016	2017	2018	2019	2020	2021	2022	2023
Revenue	\$3,291	\$3,505	\$3,680	\$3,771	\$3,922	\$4,139	\$4,433	\$4,748
Growth		6.5%	5.0%	2.5%	4.0%	5.5%	7.1%	7.1%
EBITDA	538	594	534	502	545	596	649	705
Margin	16.3%	16.9%	14.5%	13.3%	13.9%	14.4%	14.7%	14.9%
Growth		10.4%	(10.0%)	(6.2%)	8.7%	9.3%	9.0%	8.6%
Capex			44	60	62	65	68	72
Interest Expense			34	21	18	15	12	9
EPS				\$7.46	\$8.46	\$9.62	\$10.85	\$12.16
Net Debt			\$356	\$42	(\$301)	(\$679)	(\$1,094)	(\$1,555)
Total Debt			\$356	\$305	\$255	\$204	\$153	\$102

Valuation

DCF Enterprise Value	\$7,996
Implied EV/EBITDA	15.0x
DCF Equity Value	\$7,639
Forward Implied P/E	25.7x

DCF Equity Sensitivity Analysis

	WACC		
Growth	6.0%	8.0%	10.0%
2.0%	\$ 251.64	163.34	119.26
3.0%	327.51	191.50	133.28
4.0%	479.25	233.74	151.97

“You pay a very high price in the stock market for a cheery consensus.”

-Warren Buffett, guest article for Forbes, 1979⁴⁵

RISKS AND MITIGANTS

Real Estate Slowdown

As Acuity’s sales are strongly tied to new construction, a real estate slowdown or recession could materially impact the Company’s sales both regard to volume and price/mix. When the housing market crashed in 2007, AYI’s sales were severely impacted -- although the company did manage to stay profitable during those years.

Despite fears of another potential bubble, housing starts over the past few years are still roughly 25-30% lower than the levels we had seen in the years leading to the collapse (see Exhibit 6.1).⁴⁶ This suggests that should a real estate slowdown occur the severity of it will be far less than in 2007. As AYI expands into new verticals like horticultural lighting, I believe the Company can weather such a storm and come out stronger – and with less competition.

Tight Labor Market Leading to Further Wage Inflation

We may see further wage inflation negatively impact margins if the labor market remains tight. Since cost increases are industry-wide, I expect any margin contraction from this effect to be temporary, as rises in costs will eventually be passed onto consumer.

The Elephant in the Room: US China Trade War

In early May, Trump announced that tariffs would indeed be raised to 25% in response to Chinese officials allegedly renegeing on certain aspects of the trade deal. While the market reacted violently to begin the week, it appears to have stabilized as both US and Chinese officials have expressed that both sides are still “congenial” and working toward a resolution. Of note, shares of AYI are only down 1.08% during this span while the S&P500 gave up 2.18%

If US-China talks break down completely, we could see customers become increasingly reluctant to commit to long-term investment projects including real estate. This would naturally negatively affect Acuity’s sales. While the macro risk certainly persists, I expect company-specific impact to operations will largely be capped because in the worst case scenario, Acuity can continue shifting operations out of China.⁴⁷ In recent times, the Company has been shifting more of its operations into Mexico (see Exhibit 6.2) to take advantage of significantly reduced transport costs as oil continues to rebound. The Company has also recently demonstrated the ability to raise prices without cutting too much into sales growth. As noted in the 2Q19 earnings call, even despite a frontloading of sales into the previous quarters due to the announced price increases, AYI saw roughly 3% year over year sales growth in Q2.

Ultimately, the US and Chinese economies have grown to rely on each other, and it is my belief that despite his rhetoric about tariffs “helping” the US economy (see Exhibit 6.3), Trump is well aware that a resolution is ideal.

But What about Mexico?

The current administration could act on one of its innumerable threats to close the Mexican border. Naturally this would be disastrous for American companies doing business in Mexico. Acuity in fact manufactures a bulk of its products in Mexico and could have its operations significantly impacted should the unthinkable occur.

This scenario appears to be highly unlikely, as the Trump administration quickly walked back on its latest threats when it faced backlash from economists, businesspersons and fellow Republicans alike.⁴⁸

The Usual Suspects: Miscellaneous Ever-Present Risks

- The costs of raw materials (particularly steel and oil) could surge due to some uncontrollable, unforeseen event including wars, natural disasters, accidents, etc.
- As the technological landscape evolves, Acuity could fail to keep up with trends.
- The Company could be adversely affected by disruptions to its operations, including but not limited to labor disputes, workplace violence, pandemics, cyber-attacks, war, natural disasters, etc.

“The trick is not to learn to trust your gut feelings, but rather to discipline yourself to ignore them. Stand by your stocks as long as the fundamental story of the company hasn’t changed.”

- Peter Lynch, One Up On Wall Street, 1989⁴⁹

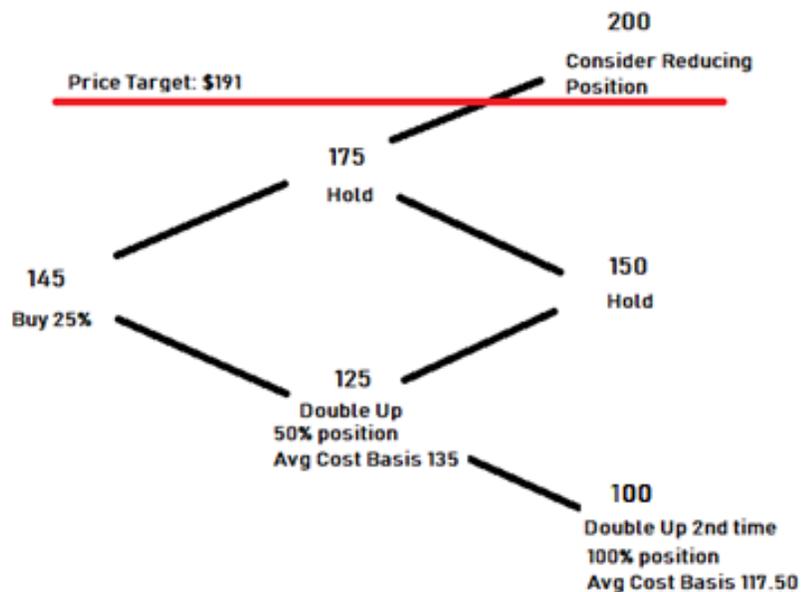
RECOMMENDATION

Based on the following reasons:

- our multi-pronged valuation method utilized relative, historic, and DCF analysis, and each method came within \$5 of the average;
- we have modeled in a margin of safety into each of our valuation methods;
- Acuity has outperformed its competitors and gained market share in recent years;
- the runway for growth appears to be bright for the lighting industry;
- we have many reasons to believe Mr. Graham and Mr. Buffett would have approved;

I assign a 12-month price target of \$191, representing an upside of 33% (as of 5/10/19).

Due to the number of catalysts on the immediate horizon (see next page), **I recommend a dollar-cost-averaging approach** in which we buy 25% of the maximum amount we are prepared to invest, doubling up should the stock gap downward after a negative news headline. A hypothetical binary decision tree is below.



SUPPLEMENTAL INFORMATION AND DATA**Upcoming Potential Catalysts:****April 30 – China Talks in Beijing to begin**

Talks appear to have taken a turn for the worse as Trump reignited threats of a 25% tariff raise
Market reacted negatively (-2.5%) but AYI remained relatively insulated (-1%)

May 1 – CREE Q3 Earnings Release after bell

LED components saw softer demand due to “global trade uncertainties,” AYI unchanged

May 7 – HUBB Annual General Meeting

Similar commentary about softer

May 8 – Oppenheimer Annual Industrial Conference

Has the potential to be a mover if analysts ask the right questions

May 8 – China Talks in Washington to begin

No resolution was reached and a 25% tariff went into effect for goods shipped after May 10
Despite the failure to reach a deal, both sides have expressed some optimism on deal progress
Trump has sent out mixed signals which the market appears to interpret as his method of negotiating

Mid May – BWG Industry Conference

Industry outlook updates expected; in the past, this conference has been a mover

Mid to Late May – Possible Updates on China Deal

The weeks ahead appear choppy, as China is expected to announce their countermeasures to the tariffs
CNBC notes that since the tariffs do not apply to goods shipped before May 10, this “creates a possible period of up to a few weeks for the sides to possibly avoid escalation”
Any update with regard to the tariffs or a US-China deal could have severe implications

May 19-21 – Lightfair 2019 Industry Expo

Likely not a major mover but we could see Acuity unveil new products

Early July – Q3 Earnings Release

Likely to be a mover

Early October – FY19 Earnings Release

Likely to be a significant mover

Early November – Robert W. Baird Industrial Conference

Has the potential to be a mover if industry outlook is updated

Supplementary Excel Sheets

In addition to the DCF model and WACC calculations, the spreadsheet file features __ sheets that provide additional information regarding calculations for the figures given throughout this report. Below is a guide:

1. Completed Financial DCF Model
2. WACC calculation
3. Basic stock info
4. Volume and price mix as percent of sales estimates
5. Historical price to sales calculations
6. Historical price to earnings calculations
7. Historical price to free cash flow calculations
8. Historical EV to EBIT calculations
9. Liabilities to assets over time
10. COGS to sales over time
11. SGA to sales over time
12. Comparable sales growth calculations
13. Sales by geographical region (Bloomberg)
14. Comparables analysis
15. Bloomberg data exports

APPENDIX



Exhibit 1.1: Current earnings multiple (orange) has not been seen since 2009 and briefly in 2011; at a multiple of 14x (yellow line), which had not been seen since 2009, AYI would have hit almost all of Mr. Graham’s criteria.



Exhibit 1.2: Earnings have grown fairly consistently over the past 10 years

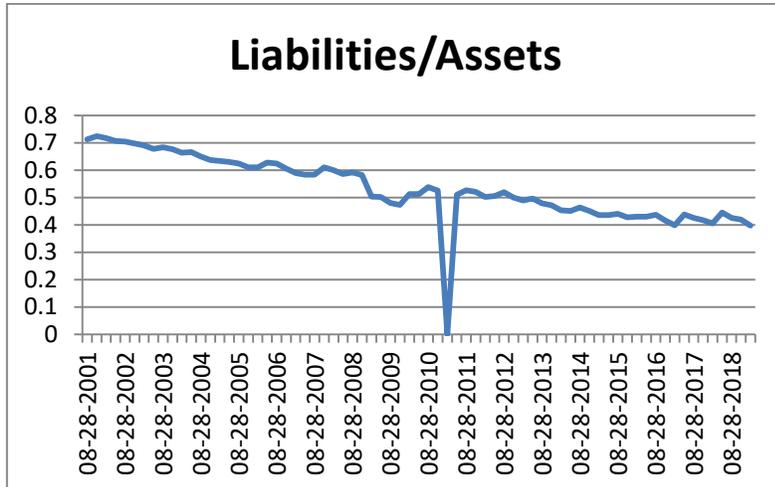


Exhibit 1.3: Liabilities as a percent of total assets continues to diminish



Exhibit 1.4: ROE continues to improve



Exhibit 1.5: Net margin continues to improve despite pressure on gross margins, thanks largely to reduced SGA as a proportion of sales due to improved efficiency

Fiscal 2018 Acquisitions**IOTA Engineering, LLC**

On May 1, 2018, using cash on hand and borrowings available under existing credit arrangements, the Company acquired all of the equity interests of IOTA Engineering, LLC ("IOTA"). IOTA is headquartered in Tucson, Arizona and manufactures highly engineered emergency lighting products and power equipment for commercial and institutional applications both in the U.S. and international markets. The operating results of IOTA have been included in the Company's consolidated financial statements since the date of acquisition and are not material to the Company's financial condition, results of operations, or cash flows.

Lucid Design Group, Inc.

On February 12, 2018, using cash on hand, the Company acquired all of the equity interests of Lucid Design Group, Inc ("Lucid"). Lucid is headquartered in Oakland, California and provides a data and analytics platform to make data-driven decisions to improve building efficiency and drive energy conservation and savings. The operating results of Lucid have been included in the Company's consolidated financial statements since the date of acquisition and are not material to the Company's financial condition, results of operations, or cash flows.

Fiscal 2016 Acquisitions**DGLogik, Inc.**

On June 30, 2016, using cash on hand and treasury stock, the Company acquired DGLogik, Inc. ("DGLogik") a provider of innovative software solutions that enable and visualize the IoT. DGLogik's solutions provide users with the intelligence to better manage energy usage and improve facility performance. DGLogik is headquartered in the San Francisco Bay Area, California. The operating results of DGLogik have been included in the Company's consolidated financial statements since the date of acquisition and are not material to the Company's financial condition, results of operations, or cash flows. The Company finalized the acquisition accounting for DGLogik during fiscal 2017, and the amounts are reflected on the *Consolidated Balance Sheets*. There were no material changes to the Company's financial statements as a result of the finalization of the acquisition accounting.

Juno Lighting LLC

On December 10, 2015, using cash on hand, the Company acquired for approximately \$380.0 million all of the equity interests of Juno Lighting LLC ("Juno Lighting") a leading provider of downlighting and track lighting fixtures for both residential and commercial applications. Juno Lighting is headquartered in Des Plaines, Illinois. The operating results of Juno Lighting have been included in the Company's consolidated financial statements since the date of acquisition.

Provisional amounts recognized at the acquisition date related to the Juno Lighting acquisition were prospectively adjusted in the second quarter of fiscal 2017 to reflect the finalization of the valuation of customer relationships and certain accrued liabilities. These adjustments resulted in an increase to intangible assets, net of \$81.1 million, a decrease to goodwill of \$50.5 million, an increase to deferred income tax liabilities of \$29.6 million, and a decrease to net operating working capital of \$1.0 million in the second quarter of fiscal 2017. Additionally, the Company recorded \$1.5 million of additional amortization expense during fiscal 2017 to reflect the amortization that would have been recognized in previous periods if the adjustment to intangibles was recognized as of the acquisition date. The fair values of assets acquired and liabilities assumed were finalized and reflected on the *Consolidated Balance Sheets* prospectively as of February 28, 2017.

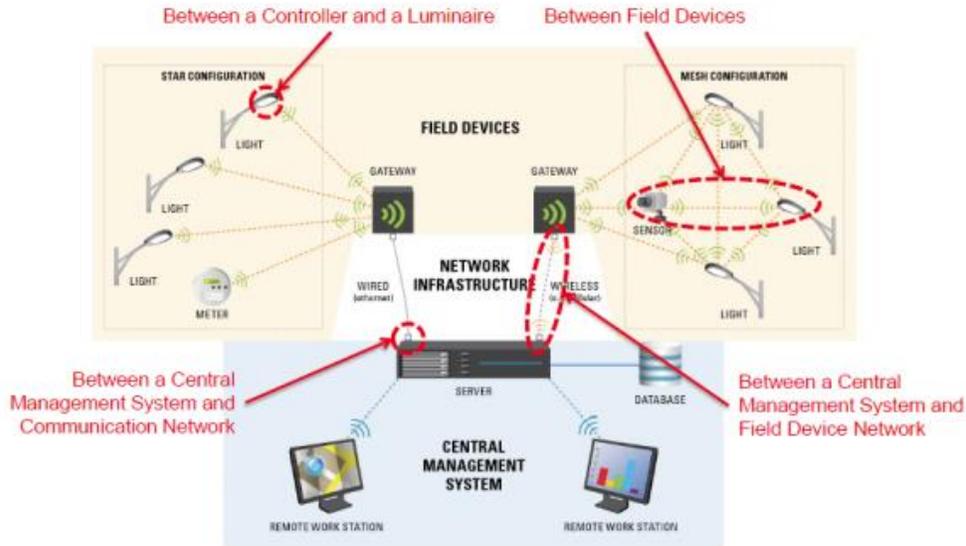
Geometri LLC

On December 9, 2015, using cash on hand, the Company acquired certain assets and assumed certain liabilities of Geometri, LLC ("Geometri"), a provider of a software and services platform for mapping, navigation, and analytics. The operating results of Geometri have been included in the Company's consolidated financial statements since the date of acquisition. The Company finalized the acquisition accounting for Geometri during fiscal 2017, and the amounts are reflected on the *Consolidated Balance Sheets*. There were no material changes to the Company's financial statements as a result of the finalization of the acquisition accounting.

Distech Controls Inc.

On September 1, 2015, using cash on hand, the Company acquired for approximately \$240.0 million all of the outstanding capital stock of Distech Controls Inc. ("Distech Controls"), a provider of building automation solutions that allow for the integration of lighting, heating, ventilation, and air conditioning ("HVAC"), access control, closed circuit television, and related systems. Distech Controls is headquartered in Quebec, Canada. The Company finalized the acquisition accounting for Distech Controls during fiscal 2016. There were no material changes to the Company's financial statements as a result of the finalization of the acquisition accounting.

Exhibit 2.1: Acuity's acquisitions since FY16. Note that these appear to be mostly IOT and data analytic/software.
Source: AYI 2018 10K pp. 54-55



Source: Michael Poplawski, PNNL, DOE SSL Market Development Workshop, Detroit, MI, November 2014

Exhibit 2.2: Diagram of the interplay between IOT and BMS.

Lighting Comparison

	Incandescent	Fluorescent	LEDs	OLEDs
Efficacy	17 lm/W	100 lm/W	80-90 lm/W – White 65 lm/W – warm white 240 lm/W-lab demo	150 lm/W Lab demos
CRI	100	80-85	80 – white 90 – warm white	Up to 95
Form Factor	Heat generating	Long or compact gas filled glass tube	Point source high intensity lamp	Large area thin diffuse source. Flexible, transparent
Safety concerns	Very hot	Contains mercury	Very hot in operation	None to date
LT70 (K hours)	1	20	50	30
Dimmable	Yes, but much lower efficacy	Yes, efficiency decreases	Yes, efficiency increases	Yes, efficiency increases
Noise	No	Yes	No	No
Switching lifetime	Poor	Poor	Excellent	Excellent
Color Tunable	No	No	Yes	Yes

Exhibit 2.3: Comparison of OLED, LED, and traditional light sources



Exhibit 2.4: Examples of Acuity brand OLED lighting used in design applications

Table 5.4 Cost Targets for Panels Produced by Traditional Methods

	2016	2018	2020	2025
Substrate Area (m ²)	0.2	1.2	1.2	2.7
Capital Cost (\$M)	50	125	125	200
Cycle Time (minutes)	3	2	1	0.5
Capacity (1000 m ² /yr)	17	175	350	2,400
Depreciation (\$/m ²)	600	140	70	35
Organic Materials (\$/m ²)	150	100	50	15
Inorganic Materials (\$/m ²)	200	140	100	30
Labor (\$/m ²)	100	25	15	5
Other Fixed Costs (\$/m ²)	50	15	10	5
Total (unyielded) (\$/m ²)	1,100	420	245	90
Yield of Good Product (%)	70	80	85	90
Total Cost (\$/m ²)	1,570	525	290	100

Exhibit 2.5: The projected cost targets of OLED lighting production are expected to continue to diminish into 2025
 Source: US Department of Energy, Office of Energy Efficiency and Renewable Energy, Solid-State Lighting Report; 2017

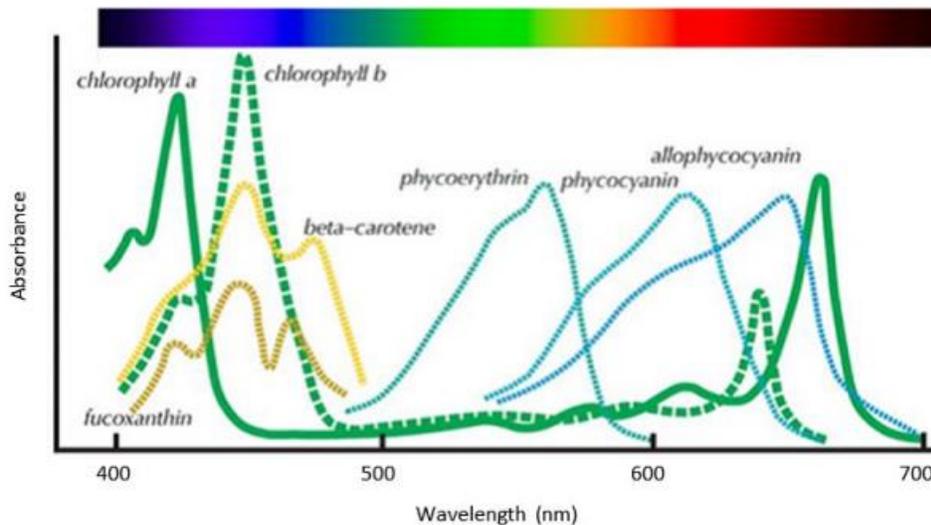
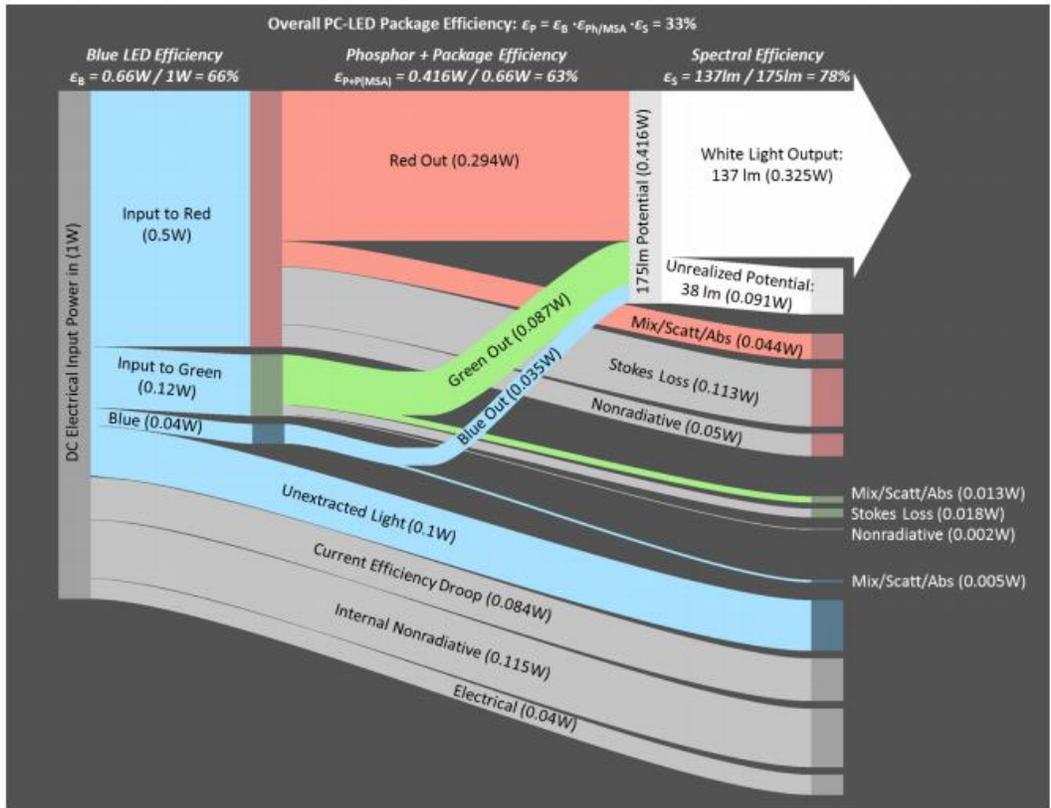


Figure 3.14 Absorption Spectrum of Various Plant Pigments

Source: Lincoln Taiz et al., "Plant Physiology and Development," 2014 [92]

Exhibit 2.6: The varying light frequencies that different plant pigments react to; LED lighting has the capability to adjust its frequency to optimally target specific pigments



Note: The diagram gives estimates for how 1 W = 0.35 A x 2.85 V of DC power is distributed into various useful and non-useful (loss) streams en route to being converted into white light. The colors of the various streams indicate the type of power they contain: gray for electronic excitations, colored for light at various red, green and blue (RGB) wavelengths, and white for white light formed from a combination of colors. For each loss stream, values indicate both its absolute power as well as the percentage it represents of its immediately preceding parent stream.

Figure 4.5 Electricity-to-Visible-Light Power-Flow Diagram for a 2016 State-of-the-Art Warm White Commercial PC-LED Package

Source: Tsao, Coltrin, Crawford, and Simmons, "Solid-State Lighting: An Integrated Human Factors, Technology, and Economic Perspective," July 2010 [96]

Exhibit 2.7: LED lights are both less wasteful and offer a wider spectrum of light frequencies that cause photosynthesis



Exhibit 2.8: AYI issues buybacks when the stock falls and uses stock as currency for acquisitions as it appreciates

BOARD OF DIRECTORS

Vernon J. Nagel⁽¹⁾

Chairman, President, and
Chief Executive Officer
Acuity Brands, Inc.

W. Patrick Battle

Managing Partner
Stillwater Family Holdings

Peter C. Browning⁽²⁾

Managing Director
Peter Browning Partners Board
Advisory Services

G. Douglas Dillard, Jr.

Founder and Managing Director
Slewgrass Capital, LLC

James H. Hance, Jr.

Operating Executive
The Carlyle Group;
Former Vice Chairman
Bank of America Corporation

Robert F. McCullough

Former Chief Financial Officer
AMVESCAP PLC
(now known as Invesco Ltd.)

Julia B. North

Former President and
Chief Executive Officer
VSI Enterprises, Inc.;
Former President of Consumer
Services BellSouth Corporation

Dominic J. Pileggi⁽³⁾

Former Chairman and
Chief Executive Officer
Thomas & Betts Corporation

Ray M. Robinson⁽⁴⁾

Non-Executive Chairman
Citizens Trust Bank;
President Emeritus
East Lake Golf Club

Norman H. Wesley

Former Chairman and
Chief Executive Officer
Fortune Brands, Inc.

Mary A. Winston

President
Winsco Enterprises, Inc.;
Former Executive Vice President
and Chief Financial Officer
Family Dollar Stores, Inc.

Exhibit 2.9: Acuity Brands' board of directors

Source: AYI 2018 Annual Report

Vernon J. Nagel

Title : Chairman

Compensation History

Year	2018 in Actual USD	2017 in Actual USD	2016 in Actual USD
Salary	600,000	600,000	600,000
Bonus	N/A	N/A	N/A
Stock Awards	1,333,381	3,333,623	3,333,320
Option Awards	666,654	1,666,379	1,666,681
Non-Equity Incentive Plan Compensation	N/A	N/A	5,000,000
Change in Pension Value & Non-Qualified Deferred Comp. Earni	N/A	2,047,080	4,615,999
Long-Term Compensation	N/A	N/A	N/A
All Other Compensation	64,577	61,819	59,516
Total Compensation	2,664,612	7,708,901	15,275,516

Richard K. Reece

Title : Executive Vice President

Compensation History

Year	2018 in Actual USD	2017 in Actual USD	2016 in Actual USD
Salary	468,333	455,000	451,250
Bonus	750,000	N/A	N/A
Stock Awards	666,691	1,666,812	1,000,141
Option Awards	333,327	833,276	499,983
Non-Equity Incentive Plan Compensation	N/A	N/A	2,000,000
Change in Pension Value & Non-Qualified Deferred Comp. Earni	N/A	847,969	2,817,627
All Other Compensation	14,894	14,536	12,147
Total Compensation	2,233,245	3,817,593	6,781,148

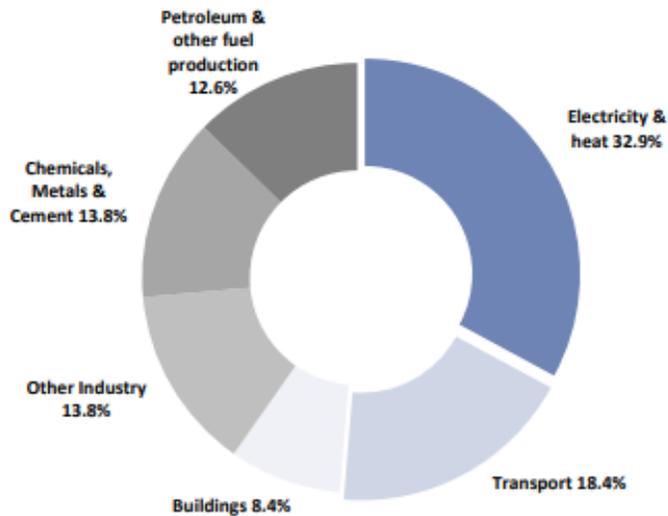
Exhibit 2.10: Executive salaries are tied to stock performance



Exhibit 3.1: Revenue growth from 2013-2018 was approximately 12.5% per annum

Exhibit 22: Electricity and transport dominate carbon emissions

Anthropogenic GHG emissions by source (excl. agriculture, forestry, and land use changes)

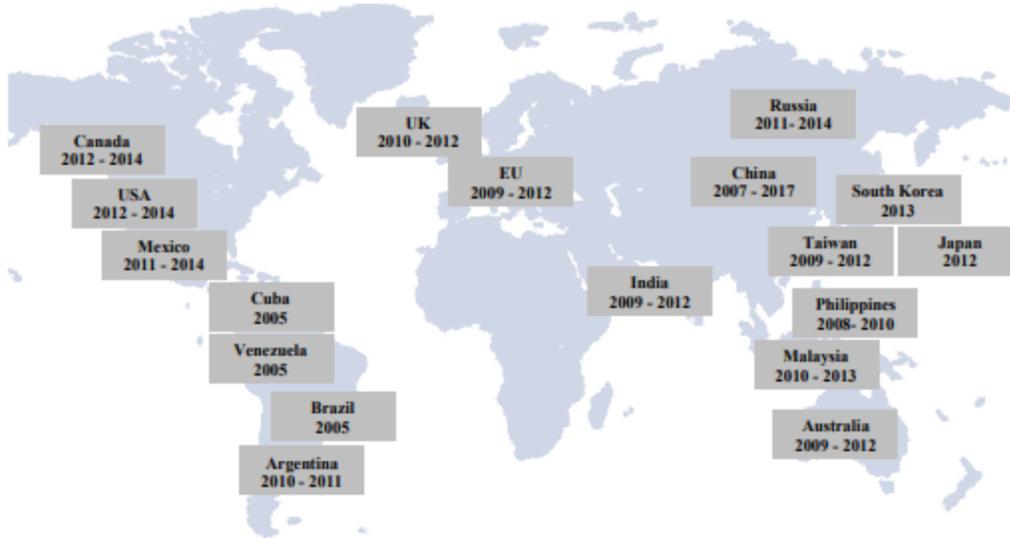


Source: IPCC, Goldman Sachs Global Investment Research.

Exhibit 3.2: Electricity consumption accounts for roughly 33% of carbon emissions

Exhibit 27: Continued policy pressure...

Policies to ban or phase out incandescent light bulbs by country

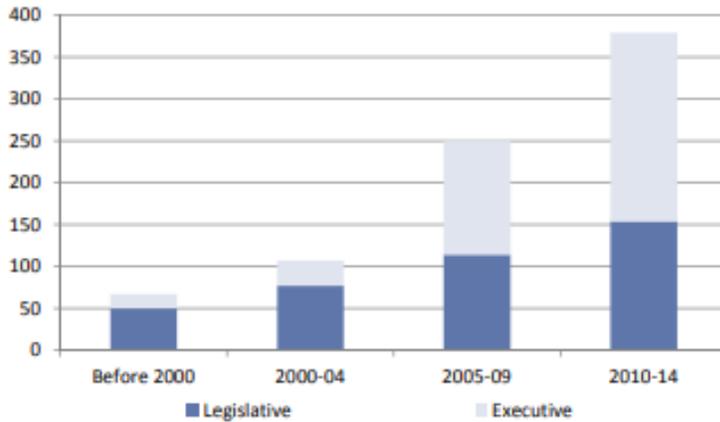


Source: IEA, DOE, Goldman Sachs Global Investment Research.

Exhibit 3.3: Pro-LED policies across the globe

Exhibit 38: National emissions regulation increases rapidly

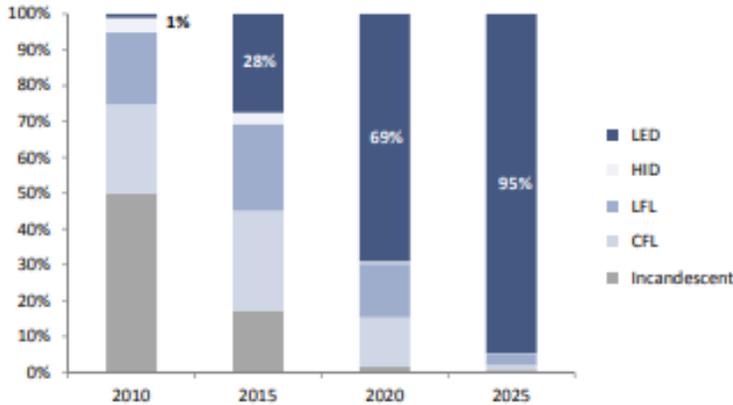
Number of national laws enacted on climate change mitigation and low carbon technologies



Source: LSE, Goldman Sachs Global Investment Research.

Exhibit 3.4: Increased US regulations on emissions over the years

Exhibit 30: ...drives rapid gains in market share for LEDs
 Market share by technology in the global lighting market

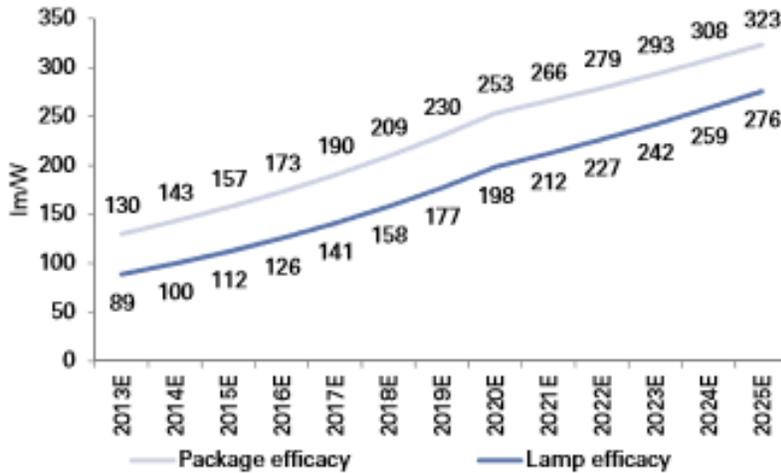


Source: Goldman Sachs Global Investment Research.

Exhibit 3.5: Rapid market-share growth for LED-based lighting expected into 2025

Exhibit 28: ...in combination with steady performance improvements...

The light output per unit of electricity continues to increase rapidly



Source: Goldman Sachs Global Investment Research.

Exhibit 3.6: LED light output and efficiency continues to improve



Exhibit 3.7: The lighting industry supply chain

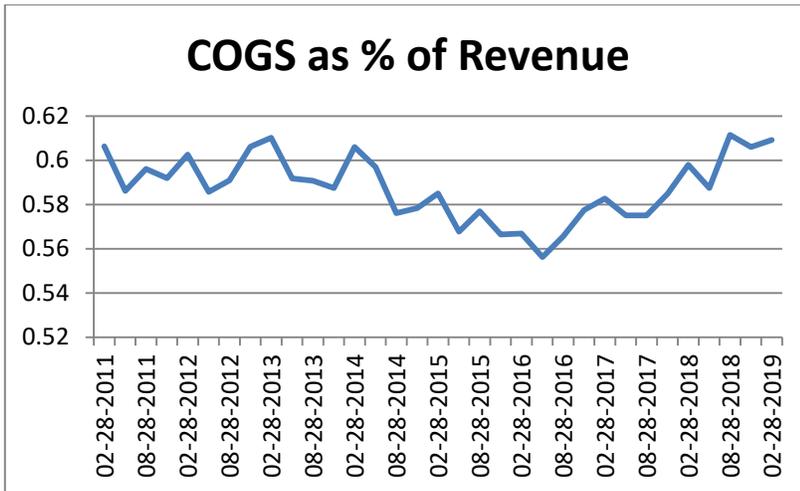


Exhibit 4.1: COGS as % of sales had come down through 2016 until spiking recently due to wage hikes and tariffs

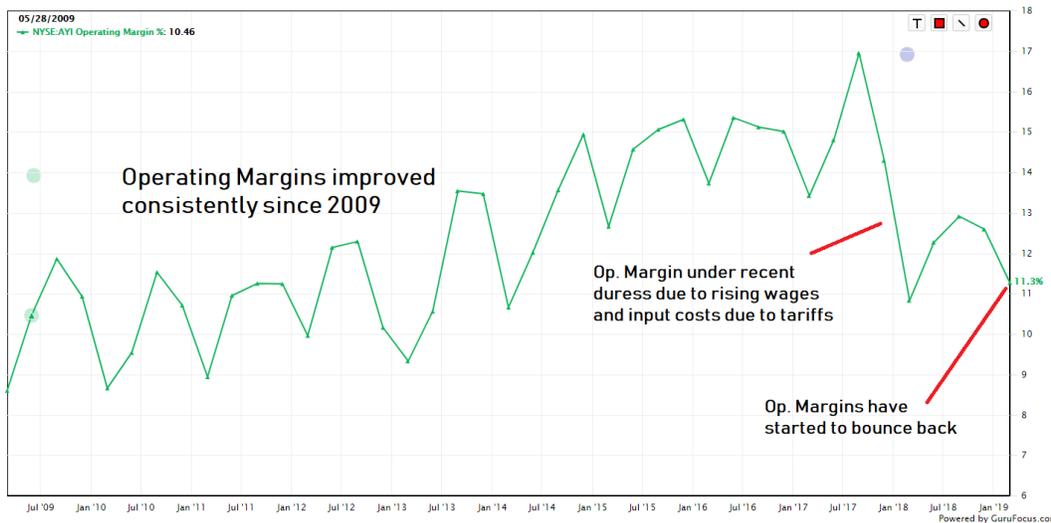


Exhibit 4.2: Operating Margins have shown signs of recovery after several quarters of year over year decline



Exhibit 4.3: Virtually no default risk
 Source: Bloomberg

Year	Thousands	% Change	Year	Thousands	% Change
1980	1,292.20	N/A	2003	1,847.70	8.4
1981	1,084.20	-16.1	2004	1,955.80	5.9
1982	1,062.20	-2.0	2005	2,068.30	5.8
1983	1,703.00	60.3	2006	1,800.90	-12.9
1984	1,749.50	2.7	2007	1,355.00	-24.8
1985	1,741.80	-0.5	2008	905.50	-33.2
1986	1,805.40	3.7	2009	554.00	-38.8
1987	1,620.50	-10.3	2010	586.90	5.9
1988	1,488.10	-8.2	2011	608.80	3.7
1989	1,376.10	-7.5	2012	780.60	28.2
1990	1,192.70	-13.3	2013	924.90	18.5
1991	1,013.90	-15.0	2014	1,003.30	8.5
1992	1,199.70	18.3	2015	1,111.80	10.8
1993	1,287.60	7.3	2016	1,173.80	5.6
1994	1,457.00	13.2	2017	1,202.90	2.5
1995	1,354.10	-7.1	2018	1,297.23	7.8
1996	1,476.80	9.1	2019	1,353.11	4.3
1997	1,474.00	-0.2	2020	1,408.66	4.1
1998	1,616.90	9.7	2021	1,450.17	2.9
1999	1,640.90	1.5	2022	1,489.85	2.7
2000	1,568.70	-4.4	2023	1,524.56	2.3
2001	1,602.70	2.2	2024	1,555.51	2.0
2002	1,704.90	6.4	2025	1,582.82	1.8

Exhibit 6.1: US housing starts show that we are currently nowhere near the levels preceding the 2007 crash

Manufacturing and Distribution

The Company operates 19 manufacturing facilities, including nine facilities in the United States, six facilities in Mexico, two facilities in Europe, and two in Canada. The Company utilizes a blend of internal and outsourced manufacturing processes and capabilities to fulfill a variety of customer needs in the most cost-effective manner. Certain critical processes, such as reflector forming and anodizing, high-end glass production, surface mount circuit board production, and assembly are performed (not exclusively) at company-operated facilities, offering the ability to differentiate products through superior capabilities. Other components, such as lamps, LEDs, certain LED light engines, sockets, and ballasts are purchased primarily from third-party vendors. The Company's investment in its production facilities is focused primarily on improving capabilities, product quality, and manufacturing efficiency as well as environmental, health, and safety compliance. The Company also utilizes contract manufacturing from U.S., Asian, and European sources for certain products. The following table shows the percentage of finished goods manufactured and purchased in fiscal 2018 by significant geographic region.

	Manufactured	Purchased	Total
United States	19%	7%	26%
Mexico	57%	—%	57%
China	—%	15%	15%
Others	2%	—%	2%
Total	78%	22%	100%

Exhibit 6.2: More operations being shifted into Mexico

Source: AYI 2018 10K



Donald J. Trump ✓

@realDonaldTrump

Following

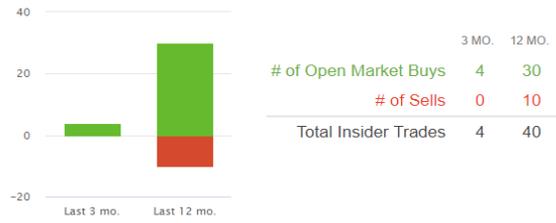


Tariffs will make our Country MUCH STRONGER, not weaker. Just sit back and watch! In the meantime, China should not renegotiate deals with the U.S. at the last minute. This is not the Obama Administration, or the Administration of Sleepy Joe, who let China get away with "murder!"

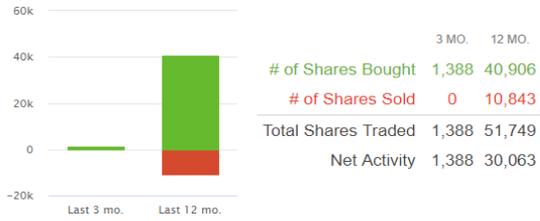
7:48 AM - 10 May 2019

Exhibit 6.3: Trump either doesn't understand macroeconomics or is pretending not to

Number of Insider Trades



Number of Insider Shares Traded



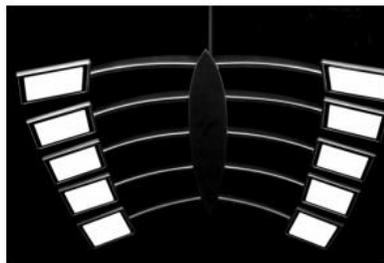
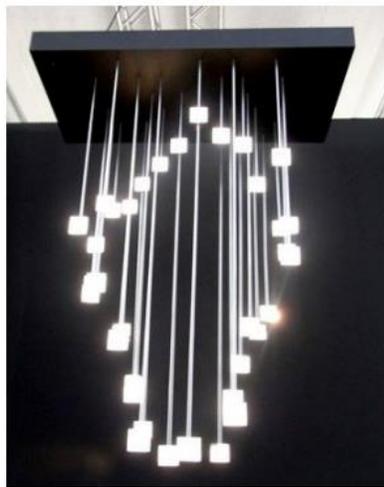
Insider trades have been favorable in recent months
 Source: NASDAQ



Source: Cree Inc., January 2015



Atlanta Airport after upgrading to Acuity branded indoor accent lighting.



More examples of OLED lighting products

ACUITY BRANDS, INC.
CONSOLIDATED BALANCE SHEETS
(In millions, except share data)

	August 31,	
	2018	2017
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 129.1	\$ 311.1
Accounts receivable, less reserve for doubtful accounts of \$1.3 and \$1.9, respectively	637.9	573.3
Inventories	411.8	328.6
Prepayments and other current assets	32.3	32.6
Total current assets	<u>1,211.1</u>	<u>1,245.6</u>
Property, plant, and equipment, at cost:		
Land	22.9	22.5
Buildings and leasehold improvements	189.1	180.7
Machinery and equipment	516.6	484.6
Total property, plant, and equipment	728.6	687.8
Less — Accumulated depreciation and amortization	(441.9)	(400.1)
Property, plant, and equipment, net	<u>286.7</u>	<u>287.7</u>
Goodwill	970.6	900.9
Intangible assets	498.7	448.8
Deferred income taxes	2.9	3.4
Other long-term assets	18.8	13.2
Total assets	<u>\$ 2,988.8</u>	<u>\$ 2,899.6</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 451.1	\$ 395.1
Current maturities of long-term debt	0.4	0.4
Accrued compensation	67.0	41.8
Other accrued liabilities	164.2	163.6
Total current liabilities	<u>682.7</u>	<u>600.9</u>
Long-term debt	356.4	356.5
Accrued pension liabilities	64.6	96.9
Deferred income taxes	92.5	108.2
Self-insurance reserves	7.9	7.9
Other long-term liabilities	67.9	63.6
Total liabilities	<u>1,272.0</u>	<u>1,234.0</u>
Commitments and contingencies (see <i>Commitments and Contingencies</i> footnote)		
Stockholders' equity:		
Preferred stock, \$0.01 par value; 50,000,000 shares authorized; none issued	—	—
Common stock, \$0.01 par value; 500,000,000 shares authorized; 53,667,327 and 53,549,840 issued, respectively	0.5	0.5
Paid-in capital	906.3	881.0
Retained earnings	1,999.2	1,659.9
Accumulated other comprehensive loss	(114.8)	(99.7)
Treasury stock, at cost — 13,676,689 and 11,678,002 shares, respectively	(1,074.4)	(776.1)
Total stockholders' equity	<u>1,716.8</u>	<u>1,665.6</u>
Total liabilities and stockholders' equity	<u>\$ 2,988.8</u>	<u>\$ 2,899.6</u>



ACUITY BRANDS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In millions, except per-share data)

	Year Ended August 31,		
	2018	2017	2016
Net sales	\$ 3,680.1	\$ 3,505.1	\$ 3,291.3
Cost of products sold	2,193.3	2,023.9	1,855.1
Gross profit	1,486.8	1,481.2	1,436.2
Selling, distribution, and administrative expenses	1,026.6	951.1	946.0
Special charge	5.6	11.3	15.0
Operating profit	454.6	518.8	475.2
Other expense (income):			
Interest expense, net	33.5	32.5	32.2
Miscellaneous income, net	(4.8)	(6.3)	(1.6)
Total other expense	28.7	26.2	30.6
Income before income taxes	425.9	492.6	444.6
Income tax expense	76.3	170.9	153.8
Net income	<u>\$ 349.6</u>	<u>\$ 321.7</u>	<u>\$ 290.8</u>
Earnings per share:			
Basic earnings per share	<u>\$ 8.54</u>	<u>\$ 7.46</u>	<u>\$ 6.67</u>
Basic weighted average number of shares outstanding	<u>40.9</u>	<u>43.1</u>	<u>43.5</u>
Diluted earnings per share	<u>\$ 8.52</u>	<u>\$ 7.43</u>	<u>\$ 6.63</u>
Diluted weighted average number of shares outstanding	<u>41.0</u>	<u>43.3</u>	<u>43.8</u>
Dividends declared per share	<u>\$ 0.52</u>	<u>\$ 0.52</u>	<u>\$ 0.52</u>
Comprehensive income:			
Net income	\$ 349.6	\$ 321.7	\$ 290.8
Other comprehensive income (loss) items:			
Foreign currency translation adjustments	(25.2)	19.0	(5.6)
Defined benefit plans, net	21.2	20.7	(23.4)
Other comprehensive (loss) income items, net of tax	(4.0)	39.7	(29.0)
Comprehensive income	<u>\$ 345.6</u>	<u>\$ 361.4</u>	<u>\$ 261.8</u>



ACUITY BRANDS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Year Ended August 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income	\$ 349.6	\$ 321.7	\$ 290.8
Adjustments to reconcile net income to net cash flows from operating activities:			
Depreciation and amortization	80.3	74.6	62.6
Share-based payment expense	32.3	32.0	27.7
Loss (gain) on the sale or disposal of property, plant, and equipment	0.6	0.3	(0.9)
Asset impairments	—	—	5.1
Deferred income taxes	(38.2)	(7.7)	(8.2)
Gain on sale of business	(5.4)	—	—
Gain on sale of investment in unconsolidated affiliate	—	(7.2)	—
Change in assets and liabilities, net of effect of acquisitions, divestitures, and exchange rate changes:			
Accounts receivable	(62.8)	2.7	(94.6)
Inventories	(74.4)	(32.4)	(24.0)
Prepayments and other current assets	0.7	6.0	(10.5)
Accounts payable	52.5	(4.6)	65.3
Other current liabilities	19.1	(63.5)	60.6
Other	(1.1)	14.7	14.0
Net cash provided by operating activities	<u>353.2</u>	<u>336.6</u>	<u>387.9</u>
Cash flows from investing activities:			
Purchases of property, plant, and equipment	(43.6)	(67.3)	(83.7)
Proceeds from sale of property, plant, and equipment	—	5.5	2.2
Acquisitions of businesses and intangible assets, net of cash acquired	(163.2)	—	(623.2)
Proceeds from sale of business	1.1	—	—
Proceeds from sale of investment in unconsolidated affiliate	—	13.2	—
Other investing activities	—	(0.2)	—
Net cash used for investing activities	<u>(205.7)</u>	<u>(48.8)</u>	<u>(704.7)</u>
Cash flows from financing activities:			
Borrowings on credit facility	395.4	—	—
Repayments of borrowings on credit facility	(395.4)	—	—
(Repayments) issuances of long-term debt	(0.4)	1.0	2.5
Repurchases of common stock	(298.4)	(357.9)	—
Proceeds from stock option exercises and other	1.7	3.0	14.2
Payments for employee taxes on net settlement of equity awards	(8.2)	(15.2)	(16.6)
Dividends paid	(21.4)	(22.7)	(22.9)
Net cash used for financing activities	<u>(326.7)</u>	<u>(391.8)</u>	<u>(22.8)</u>
Effect of exchange rate changes on cash and cash equivalents	(2.8)	1.9	(4.0)
Net change in cash and cash equivalents	<u>(182.0)</u>	<u>(102.1)</u>	<u>(343.6)</u>
Cash and cash equivalents at beginning of year	311.1	413.2	756.8
Cash and cash equivalents at end of year	<u>\$ 129.1</u>	<u>\$ 311.1</u>	<u>\$ 413.2</u>
Supplemental cash flow information:			
Income taxes paid during the period	\$ 126.6	\$ 173.6	\$ 120.7
Interest paid during the period	\$ 36.7	\$ 33.6	\$ 32.8



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- ¹⁰ Acuity brands 2014 10K, p. 4
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