Electricity Cost to Shape the Aluminum Game

Egypt Aluminum's (EGAL) operational performance hit an all-time peak in FY2017/18. Earnings skyrocketed at a 3-year CAGR (FY2014/15-FY2017-18) of 145% to EGP2.72bn, buttressed by stretched operating margins and fatter revenues which soared at a 3-year CAGR of 37%. This quantum leap in growth can be chalked up to the EGP flotation and higher aluminum base prices which grew at 3-year CAGR of 4%. But this performance is likely to be harmed by the expected hikes in electricity prices after cutting the subsidy on energy prices. Hence, we see that optimizing the electricity cost would be the strongest trigger on EGAL's value in the future.

- **Electricity cost optimization is EGAL's key catalyst:** Electricity represented 35% of EGAL's cash COGS in FY2017/18 and is expected to rise to 42% in FY2018/19. In light of the economic reform program that kicked off back in November 2016, the Egyptian government will continue cutting subsidy on energy prices, harming EGAL's energy-intensive operations. EGAL successfully cut electricity consumption by 3.7% to 15,575kWh/ton in FY2017/18, which improved its operational performance. On the other hand, the government raised the electricity cost by as much as 40% to EGP1.01/kWh. We forecast kWh cost to grow at a 5-year CAGR of 16% to EGP1.51 by FY2023. Thus, implementation of the 300MW/Hour solar power plant will lend EGAL the strongest boost to overcome the kWh high cost and enhance operational performance.

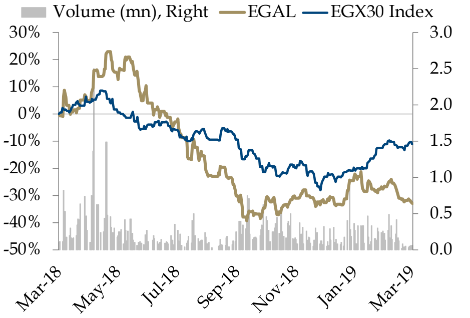
- **Margins narrow on high energy cost:** We expect margins to drop in FY2018/19 to reach its low level (GPM 12.2%) by FY2020/21 before partially recovering on expected growth in aluminum base prices. The expected decline in margins is mainly attributed to the higher electricity cost after the subsidy cut.

- **12M PT of EGP26.4/share, initiate coverage with a Neutral / High Risk (ETR +18%):** We valued EGAL by discounting FCFFs at an average WACC of c.16%, resulting in a 12-month price target (PT) of EGP26.4/share, implying an expected total return (ETR) of +18%. We believe EGAL is currently pressured in view of the expected hikes in electricity cost. Thus, we initiate coverage on EGAL with a Neutral / High Risk rating. We note that our valuation excludes the solar power plant which, if implemented, would add EGP5.5–27.5/share to our 12M PT (depending on the plant power generation capacity).

Contents

- The Story — Page 2
- The Numbers — Page 10
- The Valuation — Page 11
- The Financial Model — Page 17
- The Background — Page 18
- The Leadership — Page 19

Stock chart and data



Last Price (EGP)	22.44
52 Week Range (EGP)	21.6 - 51
6M-ADVT (EGPmn)	5.37
Market Cap (EGPmn)	9,257
No. of Shares O/S (mn) / Free float	412.5 / 10.0%

*Last Price as of 14 March 2019

Financial summary

EGPmn, except per-share	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e
Revenue	5,006	9,095	13,502	13,055	14,335	15,116
EBITDA	179	2,284	3,327	1,574	1,681	1,462
Net Income	85	1,733	2,716	1,361	1,332	1,219
Revenue Growth (%)	(5%)	82%	48%	(3%)	10%	5%
EBITDA Growth (%)	(51%)	1179%	46%	(53%)	7%	(13%)
Net Income Growth (%)	(54%)	1943%	57%	(50%)	(2%)	(9%)
EBITDA Margin (%)	3.6%	25.1%	24.6%	12.1%	11.7%	9.7%
Net Margin (%)	1.7%	19.1%	20.1%	10.4%	9.3%	8.1%
Net Debt (Cash)	(363)	(1,035)	(256)	(26)	8	(287)
EPS (adjusted)	0.21	4.20	6.58	3.30	3.23	2.95
DPS (adjusted)	0.33	1.00	6.67	1.98	1.94	1.77
BVPS (adjusted)	13.34	18.35	18.87	19.61	20.58	21.35
PER (x)	11.2x	2.2x	5.1x	6.8x	6.9x	7.6x
PBV (x)	0.2x	0.5x	1.8x	1.1x	1.1x	1.1x
Dividend Yield (%)	14.5%	10.9%	19.7%	8.8%	8.6%	7.9%

Source: Company reports, SHUAA Securities Egypt estimates.

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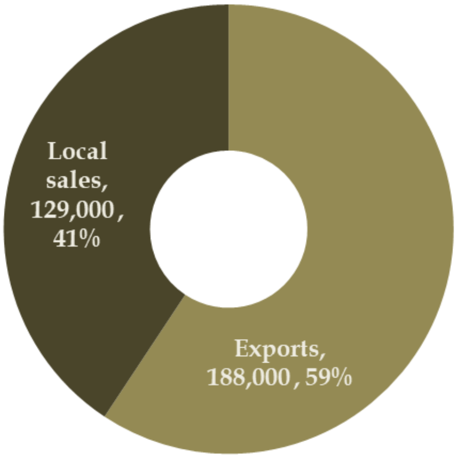
The Story

Margins of aluminum production companies are driven by three main factors which investors should monitor closely. Firstly, aluminum base price, as any increase in aluminum prices improves smelters' margins and vice versa. Secondly, raw material costs as any shortage in alumina's global capacities narrows the margins of aluminum producers. Electricity is the third and could be the most important element affecting EGAL's operations, as any reduction in either electricity consumption or kilowatt cost will mitigate the negative impact of the electricity price hikes.

Exports vs. local sales in FY2017/18



Total sales in FY2017/18 = 317,022 ton

Source: Company reports.

A cyclical industry tied to global market conditions: The aluminum industry is involved in a wide range of downstream businesses (e.g. automotive, electronics, and construction, etc. – read details on Page 5). Commodities are cyclical by nature and are tied to macro-economic conditions. With economies moving in cycles, constantly alternating between expansionary and recessionary phases, commodities consequently follow suit.

Local sales represented 41% of EGAL's total volumes sold in FY2017/18. The aluminum industry in **Egypt** has the following features:

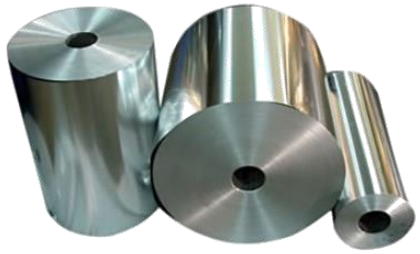
- **High barriers to entry and exit,** due to high fixed costs – a capital-intensive industry. Also, a high level of working capital is needed to operate aluminum plants, as they require huge amounts of raw materials and high electrical capacities.
- **Local monopoly player.** Given the high barriers to entry (i.e. capital intensity) and the lack of sufficiently skilled labor, EGAL is the sole producer of primary aluminum in Egypt, with a few peers in the MENA region. This also provides the company with a strong pricing ability and a bargaining edge.
- **Substitute metals**, such as copper and steel, do not have the efficiency of aluminum (see Page 5 for details).
- **Minimizing cost** is key to success in this segment (electricity and alumina are the most significant elements that affect cost of goods sold).

The Story *(Cont.'d)*

Aluminum billets

Source: Company reports.

Aluminum rolled products



Source: SHUAA Securities Research.

Aluminum wire rods

Source: SHUAA Securities Research.

EGAL is a fully-fledged manufacturer of aluminum products with a capacity of 320,000 tons/annum. EGAL markets the following products:

1. **Billets:** EGAL produces 95,000 tons of billets per annum, making up c.30% of its total output capacity. The chemical combination used in making billets, EGAL's largest production line, is specified differently by each client.

2. **Rolled products:** Uses for the rolled products are many, such as food and pharmaceuticals packaging, automotive panels, construction, and engineering (e.g. paneling, flooring, and roofing). This business line represents c.27% of EGAL's total output (85,000 tons per annum).

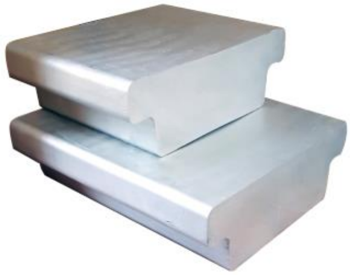
3. **Wire rods:** Aluminum wire rods are the raw material for medium- and high-voltage cable and wire manufacturers. The wire rod cast house supplies c.75,000 tons/annum of aluminum, which accounts for c.23% of EGAL's total output. The alloy tensile strength, weight, composition, and rod dimension are specified by the client in the supply contract.

4. **Ingots and T-bars:** With 35,000 ton produced each year, ingots and T-bars amount to 11% of EGAL's total output. Ingots and T-bars are essential in many markets, suchlike household appliances, transportation, and construction.

5. **Foundry alloys:** Copper, magnesium, and silicon are the common metals (the alloying elements) added to aluminum. Automotive, more than other businesses, uses foundry alloys in manufacturing automotive wheels and truck hubs. Foundry alloys make up c.5% of total output capacity (15,000 ton per annum).

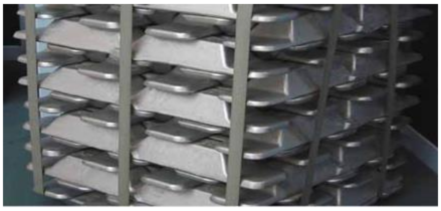
6. **Extrusion profiles:** EGAL manufactures three types of extrusion profiles: (1) standard, (2) industrial, and (3) construction. At 15,000 tons production capacity, this segment make up c.5% of EGAL's total output.

T-bars



Source: Company reports.

Foundry alloys



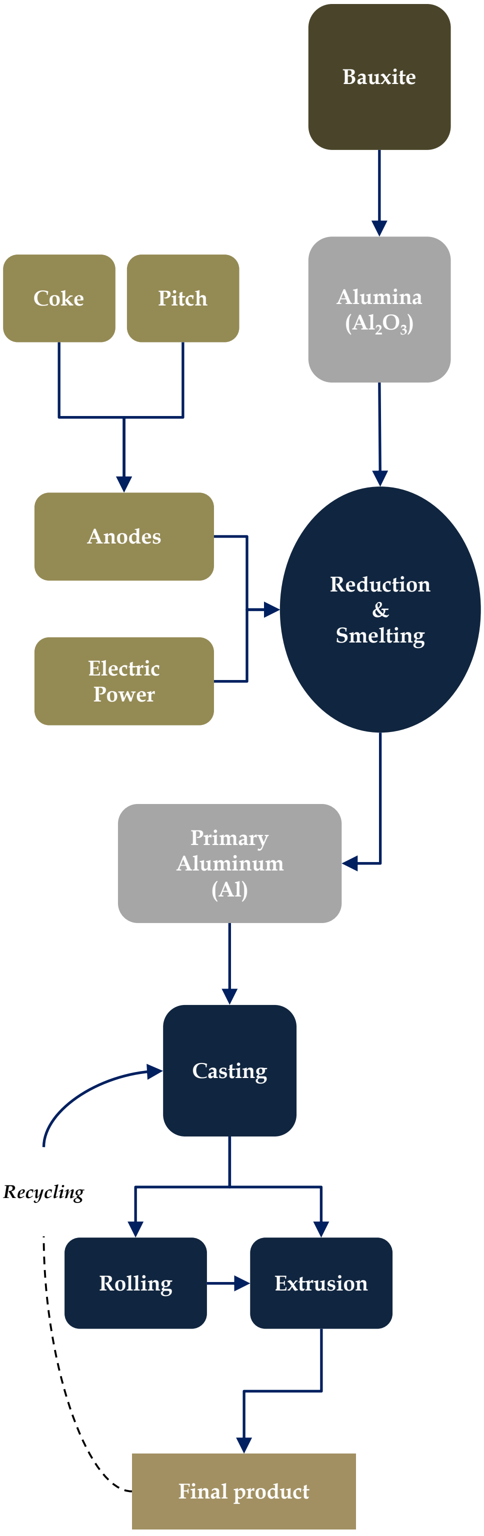
Source: Company reports.

Extrusion profiles

Source: Company reports.

The Story *(Cont.'d)*

The aluminum production process



Source: Aluminum Leader, SHUAA Securities Research.

- **Production inputs:** The basic raw materials used in aluminum production are alumina, aluminum fluoride, and carbon. Alumina (aluminum oxide, Al_2O_3) is derived from bauxite and is an element used in the electrolytic-reduction process to produce aluminum. About 4-5 tons of bauxites refined to two tons of alumina which can be processed to produce one ton of aluminum (bauxites : alumina : aluminum = 4-5 : 2 : 1). Primary aluminum is alloyed with other metals then it is fabricated into a range of products through casting, extrusion, and rolling.
- **Production process:** Primary aluminum is produced in smelters (reduction plants), where an electrolytic process converts alumina into pure aluminum. This process takes place in electrolytic cells, in which the carbon cathode is placed at the bottom of the cells, forming negative electrode. Carbon-made anodes are consumed during the electrolytic process when the anode interacts with the oxygen in alumina, creating CO_2. Electric energy of about 14-16 kWh is required in that process to produce one ton of aluminum, as per EGAL. Aluminum production passes through four stages:

  1. **Smelting (reduction):** The first and most vital step to produce primary aluminum is reduction. It is the process of uprooting aluminum from its oxide (i.e. alumina), utilizing a high electric current to provide a conductive environment at a temperature of 950°c. The molten aluminum that comes out of the smelter is then transported in buckets directly to the cast house.
  2. **Casting:** It is the process of converting aluminum into products. At this stage, molten aluminum is molded to duplicate the needed pattern. For technical purposes, secondary foundry alloys are added to the molten aluminum in this process. The most common alloy elements added to aluminum are silicon, magnesium, and copper. The addition of secondary alloys is specified by each client. After fabricating aluminum, the casting outputs are transported to the rolling and extrusion machines to shape the product into the required thickness.
  3. **Rolling:** This process is comprised of two phases, i.e. hot rolling and cold rolling. The outputs of casting machines come at a thickness of 50cm. After the rolling process, aluminum sheets and coils thickness can be decreased to 250 microns.
  4. **Extrusion:** In this stage, aluminum sections are cut into the appropriate lengths and heated before extrusion. After extrusion, the sections are cooled and hardened, and the surface is treated if needed.

The Story *(Cont.'d)*

- **Product properties:** Representing a little over 8.2% of the earth's surface, aluminum is the most abundant metal in the world and the third most plentiful element after oxygen and silicon. But what explains why aluminum is one of the most vital materials in general is its beneficial properties; **(1) Light weight and low density**: Its exact density is 2.7 g/ cm^3, which is two thirds lighter than steel; **(2) Flexibility and ductility:** The composition of aluminum alloys can be tweaked to fit the commercial purposes, a property that makes it one of the most flexible metals in the world; **(3) Corrosion-resistant and durable:** Aluminum is particularly useful for protection and conservation, as it naturally produces a protective oxide coating; **(4) Conductive:** Aluminum is a good conductor of heat and electricity. That's why it is an essential component in power transmission lines and the cables industry**; (5) Impermeable and odorless:** Aluminum is perfect for food and pharmaceutical packaging as it neither leaves taste nor toxins; **(6) Recyclability:** On paper, aluminum is completely recyclable losing none of its natural properties. It also takes 5% of the energy to recycle scrap aluminum compared to what is used for producing new aluminum.

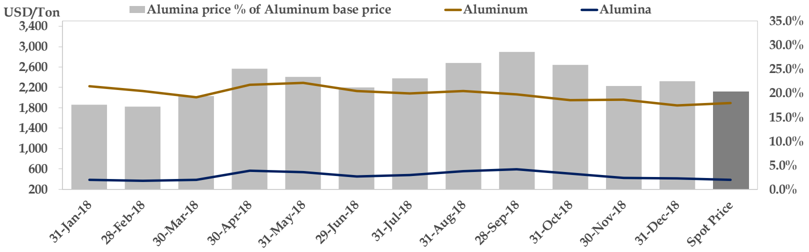
- **Different industries queue up to demand aluminum:** Having been produced commercially for more than 100 years, aluminum became a favorite for many industries and is contributing handsomely in many applications:

  1. **Transportation and automotive:** Being corrosion-resistant and low-density, aluminum is expected to replace steel in the automotive industry in the future.
  2. **Military and aircraft uses:** Being light, strong, and flexible, aluminum is perfect for the military and civil aircraft industries.
  3. **Construction architect:** Being durable and resistant to corrosion and weather, aluminum is the go-to material in construction and architect uses. It is used in thermal barriers for windows and doors as it optimizes energy efficiency through insulation, interiors, outdoor cladding, and celling systems.
  4. **Electrical and cable industries:** Aluminum's conductivity to electricity is only 63% of that of copper, but its low density makes it the best solution for long-distance power lines.
  5. **Electronics:** Aluminum use in smartphones, tablets, and laptops is on the rise. It is lately starting to replace plastic due to its strength and steel due to its lightness.
  6. **Consumer products packaging:** Aluminum is perfect for food and pharmaceutical packaging, being able to shape in any form and being naturally protective, which makes it ideal and flexible packaging material in the world.

The Story *(Cont.'d)*

- **An expected volatility in aluminum prices due to uncertainty of market conditions:** During 2018, aluminum base price ranged from USD2,537/ton to USD1,840/ton during December. This volatile, wide range could be traced to uncertainty in global market conditions. In September 2018, the **United States** had imposed a 10% tariff on USD200bn of **Chinese** imports with an intention to increase the levy to 25%, harming global trade and pressuring aluminum prices. This came after the sanctions imposed by the **US Treasury Department** on alumina and aluminum producer **UC Rusal** in April 2018. The attributable capacity of this Russian giant's alumina refineries is c.10.6mn tons or 8% of global supply, while their total capacity of aluminum is c.3.9mn tons or 6% of global supply. The **US** sanctions sent alumina prices to their peak in May, while aluminum prices followed suit but at a slower pace due to a bigger shortage in alumina supply. Metal base prices will be significantly affected by the trade negotiation between **China** and the **United States**. Furthermore, any change in the Chinese capacities, which represented c.57% of global capacity in 2018, would affect the metal base prices significantly in the future.
- **EGAL's future contracts limit alumina prices volatility risk:** During 2018, alumina prices fluctuated widely. **Australian** alumina benchmark notched a year high of USD643/ton in the beginning of May, 80% up from its lowest point of USD357/ton on 1 March 2018. This flying leap followed the **US** move to sanction **UC Rusal** in April, which caused the market to panic-buy. Throughout the rest of the year, prices remained volatile, hitting their highest monthly average in September, as half the production of **Norsk Hydro**'s subsidiary **Alunorte-Brazil**, the largest alumina refinery in the world, has been disrupted. Meanwhile, aluminum prices were relatively stable, unresponsive to higher raw materials cost. *This tightened the spread between aluminum base prices and alumina prices (the ratio of alumina vs aluminum, on a price-per-ton basis, stood at 29% compared to 17% in February), which hurt downstream aluminum producers.* To hedge price volatility risk, EGAL entered long contracts to maintain the ratio of alumina vs aluminum, on a price-per-ton basis following aluminum prices in **London Metals Exchange (LME)**. However, EGAL does not depend only on future contracts to secure its alumina needs. According to the management, the company purchases a considerable portion of its required materials in the spot market, whenever beneficial, to secure the lowest cost from global suppliers.

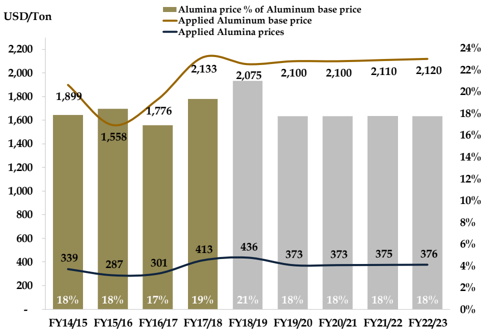
Aluminum and alumina price and spread (2018, monthly)



Source: Bloomberg.

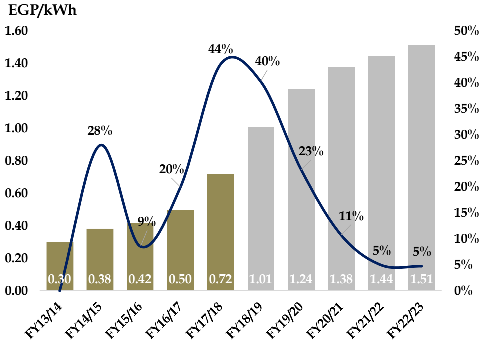
The Story *(Cont.'d)*

Spread between alumina and aluminum to normalize by FY2019/20



Source: Company reports, SHUAA Securities Egypt estimates.

Electricity prices to grow following the subsidy cut



Source: Company reports, SHUAA Securities Egypt estimates.

- **Selling prices are benchmarked to global prices:** Aluminum prices are determined through the LME. We used the forward contracts prices to estimate the future aluminum base prices, adding a premium of 16% in line with the last 3-year average. This premium reflects the additional works and supporting materials that have been used to make the final product.
- **Alumina prices to normalize by FY2019/20:** The management expects alumina's cost per ton to reach 20.97% of the aluminum base price as per EGAL's FY2018/19 budget. This percentage matches that in the cost, insurance, and freight (CIF) contract which ended in 31 December 2018. According to the management, the new long contracts could be higher in value. The spot price of Australia index is USD385/ton which accounts for 20.3% of the aluminum base price of USD1,896/ton. Therefore, if EGAL signed the new CIF contracts at the current spot prices, the company would be forced to secure alumina at a value higher than the current cost. Last January, the **US Treasury Department** said it removed the sanctions against **UC Rusal** after reducing Russian oligarch Oleg Deripaska's stake in the company, and sever his control over the company. Therefore, we think that alumina prices will soften by 2019, and the aluminum–alumina spread is going to normalize again by FY2019/20 in absence of the sanctions.
- **Higher electricity prices to erode margins starting FY2018/19:** Electricity cost represented 35% of EGAL's cash COGS in FY2017/18, and this figure is expected to rise to 42% in FY2018/19. Following the economic reform program that kicked off in November 2016, the Egyptian government will continue cutting subsidy on energy prices, harming EGAL's energy-intensive operations. EGAL successfully cut electricity consumption by 3.7% to 15,575 kWh/ton in FY2017/18, which improved its operational performance. On the other hand, the government raised the kWh cost by 40.3% to EGP1.01, and we forecast it to grow at a 5-year CAGR of 16% to EGP1.51 by 2023.
- **A solar power plant would make the turnaround story:** It has become clear that EGAL will need to overcome high electricity costs to enhance its operating margins. Reducing consumption was a good step, but it will not suffice to stage a strong margin recovery. Thus, implementing the solar power station will be the best solution for EGAL in the future. This project will reduce the electricity blended cost per kWh. Recently, the company announced plans to call for a tender to construct solar power stations (build-operate-own "BOO" deal) on 31 March 2019. The tender project aims to improve the company's operating margins by reducing electricity cost. The power station is expected to produce 300 MW/Hour which would cover more than 50% of EGAL's electricity needs at the current production capacity (c.18%, if the generator is working for 8 hours a day) and 30% if the capacity is expanded to 570,000 ton per annum (c.11%, if the generator is working for 8 hours a day). The cost of each kWh generated from the solar power plant is expected to stand at around 2.7 cents, which will reduce the average kWh cost to EGP1.24 if the solar plant covered 30% of EGAL's consumption or EGP1.06 if the plant covered 50% of EGAL's production (assuming that the new project will not be implemented).

The Story *(Cont.'d)*

Key assumptions

	FY14/15a	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e	FY21/22e	FY22/23e	5Y-CAGR
EGP/USD forecast	**7.27**	**7.99**	**15.05**	**17.67**	**17.80**	**19.31**	**20.36**	**21.37**	**22.39**	**5%**
Aluminum Global prices (USD,000)	**1.90**	**1.56**	**1.78**	**2.13**	**2.08**	**2.10**	**2.10**	**2.11**	**2.12**	**0%**
Capacity (tons,000)	**320**	**320**	**320**	**320**	**320**	**320**	**320**	**320**	**320**	
Production (tons,000)	297	296	305	305	305	305	305	305	305	0%
Utilization rate	93%	93%	95%	95%	95%	95%	95%	95%	95%	
Sales (tons,000)	**290**	**297**	**298**	**317**	**305**	**305**	**305**	**305**	**305**	-1%
Sales to Production %	98%	100%	98%	104%	100%	100%	100%	100%	100%	
Local selling price (EGP,000/ton)	**19.33**	**18.99**	**30.46**	**42.91**	**42.80**	**47.00**	**49.56**	**52.26**	**55.00**	**5%**
y/y Change %		*(1.8%)*	*60.4%*	*40.9%*	*(0.2%)*	*9.8%*	*5.4%*	*5.4%*	*5.2%*	
Export selling price (USD,000/ton)	**2.40**	**1.88**	**2.03**	**2.40**	**2.40**	**2.43**	**2.43**	**2.45**	**2.46**	**0%**
y/y Change %		*(21.8%)*	*8.0%*	*18.0%*	*0.2%*	*1.2%*	*0.0%*	*0.5%*	*0.5%*	
Exports (EGPmn)	**2,938**	**2,405**	**4,679**	**7,967**	**7,742**	**8,501**	**8,965**	**9,453**	**9,949**	**5%**
Export % of revenues	*55%*	*48%*	*51%*	*59%*	*59%*	*59%*	*59%*	*59%*	*59%*	
Exports (USDmn)	**404**	**301**	**311**	**451**	**435**	**440**	**440**	**442**	**444**	**0%**
Exports (ton000)	**168**	**160**	**153**	**188**	**181**	**181**	**181**	**181**	**181**	**-1%**
Export % of sold units	*58%*	*54%*	*51%*	*59%*	*59%*	*59%*	*59%*	*59%*	*59%*	
Local Sales (EGPmn)	**2,358**	**2,601**	**4,416**	**5,535**	**5,313**	**5,833**	**6,151**	**6,486**	**6,827**	**4%**
Local Sales % of revenues	*45%*	*52%*	*49%*	*41%*	*41%*	*41%*	*41%*	*41%*	*41%*	
Local Sales (ton000)	**122**	**137**	**145**	**129**	**124**	**124**	**124**	**124**	**124**	**-1%**
Local sales % of sold units	*42%*	*46%*	*49%*	*41%*	*41%*	*41%*	*41%*	*41%*	*41%*	
Revenues (EGPmn)	**5,296**	**5,006**	**9,095**	**13,502**	**13,055**	**14,335**	**15,116**	**15,939**	**16,775**	**4%**
Growth Rate		*-5.5%*	*81.7%*	*48.5%*	*-3.3%*	*9.8%*	*5.4%*	*5.4%*	*5.2%*	

Cost of Goods Sold										
Electricity consumption per unit (kWh)	16.64	15.92	16.17	15.58	15.58	15.58	15.58	15.58	15.58	0%
y/y Change %		*(4.3%)*	*1.5%*	*(3.7%)*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	
Total kWh Consumption (mn)	4,826	4,729	4,818	4,937	4,750	4,750	4,750	4,750	4,750	-1%
Electricity price (EGP/kWh)	0.38	0.42	0.50	0.72	1.01	1.24	1.38	1.44	1.51	16%
y/y Change %		*8.6%*	*19.9%*	*43.6%*	*40.3%*	*23.4%*	*10.7%*	*4.9%*	*4.7%*	
Electricity cost (EGPmn)	**1,853**	**1,972**	**2,409**	**3,545**	**4,785**	**5,903**	**6,536**	**6,860**	**7,186**	**15%**
% of Cash Cost	*40%*	*42%*	*38%*	*35%*	*42%*	*48%*	*49%*	*49%*	*49%*	
Materials Costs										
Alumina Cost (EGPmn)	**1,359**	**1,289**	**2,613**	**4,482**	**4,585**	**4,256**	**4,488**	**4,732**	**4,980**	**2%**
Alumina cost/ Aluminum ton (EGP,000)	4.69	4.34	8.77	14.14	15.03	13.95	14.71	15.52	16.33	
Alumina cost/ Aluminum ton (USD,000)	0.64	0.54	0.58	0.80	0.84	0.72	0.72	0.73	0.73	
Consumed Alumina tons/Aluminum ton	*1.90*	*1.89*	*1.94*	*1.94*	*1.94*	*1.94*	*1.94*	*1.94*	*1.94*	
Alumina price per ton (USD,000)	0.34	0.29	0.30	0.41	0.44	0.37	0.37	0.37	0.38	
Alumina ton % of Aluminum base price	18%	18%	17%	19%	21%	18%	18%	18%	18%	
Other Materials	**838**	**715**	**848**	**1,054**	**994**	**1,092**	**1,151**	**1,214**	**1,277**	**4%**
Other Materials per ton (EGP,000)	2.89	2.41	2.85	3.33	3.26	3.58	3.77	3.98	4.19	
Fuel, spare & Other Costs	**316**	**305**	**361**	**509**	**497**	**548**	**577**	**597**	**625**	**4%**
Fuel, spare & others per ton (EGP,000)	1.09	1.03	1.21	1.61	1.63	1.80	1.89	1.96	2.05	
Total Material Cost (EGPmn)	**2,513**	**2,309**	**3,822**	**6,045**	**6,076**	**5,895**	**6,215**	**6,543**	**6,883**	**3%**
% of Cash Cost	*53.7%*	*48.8%*	*59.7%*	*60.3%*	*53.7%*	*47.9%*	*46.8%*	*46.9%*	*47.0%*	
Labor (EGPmn)	**425**	**431**	**454**	**438**	**425**	**461**	**486**	**510**	**534**	**4%**
Labor cost per ton (EGP,000)	1.47	1.45	1.52	1.38	1.39	1.51	1.59	1.67	1.75	
Other Costs & Change in Inv (EGPmn)	**(112)**	**20**	**(284)**	**5**	**34**	**37**	**39**	**41**	**43**	
Equipment Depreciation	263	291	316	336	348	361	376	391	411	
Cash Cost of Goods Sold (EGPmn)	**4,679**	**4,732**	**6,401**	**10,033**	**11,320**	**12,296**	**13,277**	**13,954**	**14,646**	**8%**
Total COGS	**4,943**	**5,022**	**6,716**	**10,368**	**11,667**	**12,658**	**13,652**	**14,345**	**15,057**	**8%**

Source: Company reports, SHUAA Securities Egypt estimates.

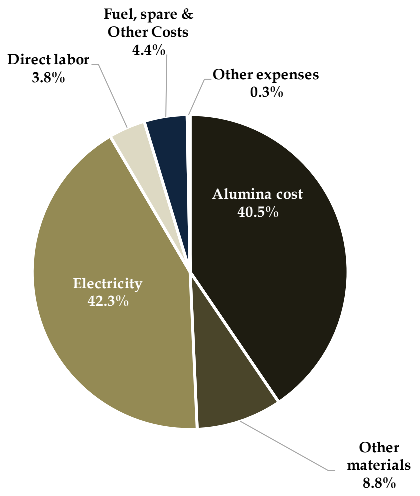
The Story *(Cont.'d)*

Key assumptions *(Cont.'d)*

	FY14/15a	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e	FY21/22e	FY22/23e	5Y-CAGR
Gross profit (EGPmn)	**617**	**275**	**2,694**	**3,470**	**1,735**	**2,038**	**1,839**	**1,986**	**2,130**	**-9%**
Gross Margin	11.7%	5.5%	29.6%	25.7%	13.3%	14.2%	12.2%	12.5%	12.7%	
SG&A (EGPmn)	**114**	**78**	**94**	**138**	**157**	**173**	**182**	**192**	**202**	**8%**
% of sales	2.1%	1.6%	1.0%	1.0%	1.2%	1.2%	1.2%	1.2%	1.2%	
Ongoing provisions	143	18	316	5	5	185	195	6	-	
EBITDA (EGPmn)	**361**	**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**1,788**	**1,928**	**-10%**
EBITDA Margin	6.8%	3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	11.2%	11.5%	
PPE Depreciation	272	331	351	362	347	333	325	319	316	-3%
EBITA	89	(153)	1,933	2,965	1,226	1,347	1,137	1,469	1,611	-11%
Adjusted EBITA	232	(134)	2,250	2,970	1,231	1,532	1,333	1,475	1,611	-12%
Amortization	-	-	-	-	-	-	-	-	-	
EBIT	**89**	**(153)**	**1,933**	**2,965**	**1,226**	**1,347**	**1,137**	**1,469**	**1,611**	**-11%**
EBIT Margin	2%	-3%	21%	22%	9%	9%	8%	9%	10%	
Capex (EGPmn)		**(235)**	**(175)**	**(252)**	**(244)**	**(268)**	**(282)**	**(298)**	**(394)**	**9%**
% of sales		(4.7%)	(1.9%)	(1.9%)	(1.9%)	(1.9%)	(1.9%)	(1.9%)	(2.4%)	
Net Income	**184**	**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**1,481**	**1,597**	**-14%**
Net Margin	3.5%	1.7%	19.1%	20.1%	10.4%	9.3%	8.1%	9.3%	9.5%	

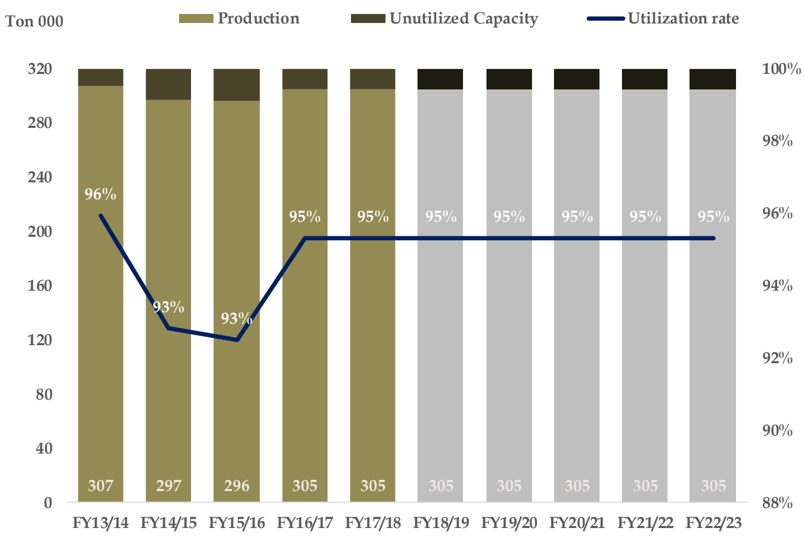
Source: Company reports, SHUAA Securities Egypt estimates.

Estimated cost breakdown for FY2018/19



Source: SHUAA Securities Egypt estimates.

Stable utilization rates

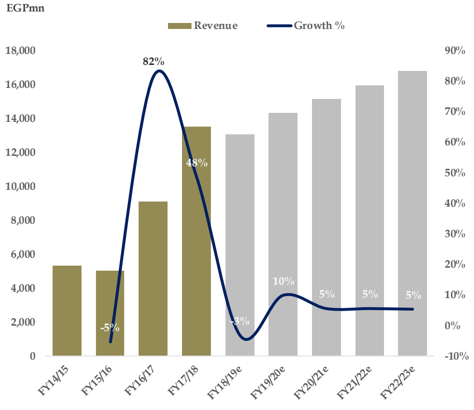


Source: Company reports, SHUAA Securities Egypt estimates.

The Numbers

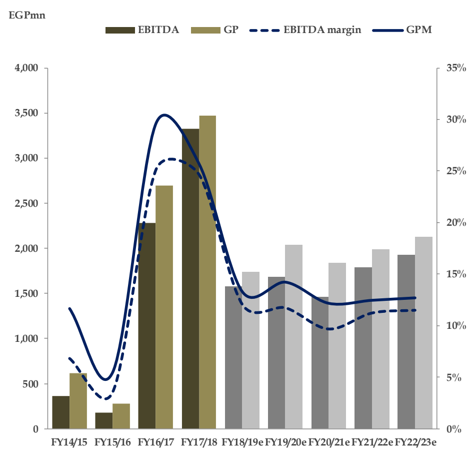
EGAL's earnings soared at a 3-year CAGR (FY2014/15-FY2017/18) of 145% to EGP2.72bn by FY2017/18, induced by improved operating margins and higher revenues which leapt at a 3-year CAGR of 37% over the period. This growth can be attributed to the EGP flotation and higher aluminum base prices. We forecast total revenues to grow at a 5-year CAGR (FY2017/18-FY2022/23) of 4%. We also expect gross profit and EBITDA margins to reach 12.7% and 11.5%, respectively, by FY2022/23.

Revenue growth mainly driven by EGP devaluation and recovery of aluminum base prices



Source: SHUAA Securities Egypt estimates.

Higher electricity costs erode the operating margins



Source: Company reports, SHUAA Securities Egypt estimates.

The Actuals

- H1 FY2018/19 results ended 31 December 2018 showed how electricity can impact the bottom line. Net profit fell 34% y/y to EGP758mn despite 12% higher revenues of EGP7.02bn as gross margin slid to 12.4% vs. 25.7% a year ago. Lower gross margin was mainly attributed to "expected" higher electricity costs after the government had raised electricity prices by 40% to EGP1.01/kWh. Top line growth could be ascribed to higher sales volumes.
- Lower operating margins could be traced to two points:
  1. **Higher electricity costs,** as the government raised the kWh cost by 40% y/y.
  2. **Tighter spreads between alumina and aluminum,** mainly due to global political instability and capacity outages.

The Forecasts

- **Lower operating margins on higher electricity cost:** We forecast total revenues to grow at a 5-year CAGR of 4% to EGP16.77bn by FY2022/23 following the FX rate. We also predict an EBITDA decline at a 5-year CAGR of 10% over our forecast period, weighed down by higher electricity cost and weaker operating margins. The increase in electricity cost will cut EBITDA by EGP1.43bn or 43% in FY2018/19.
- We estimate maintenance capex to be around last year's ratio of 1.9% of total revenues during the FY2018/19-FY2021/22 period, rising to 2.4% for FY2022/23 or EGP394mn to represent 125% of the property, plant, and equipment (PPE) depreciation.
- **Dividends to normalize on healthy cash flows:** EGAL's AGM, held on 9 October 2018, had approved a cash dividend of EGP3.00/share (based on a share count of 275mn) for FY2017/18. On 30 May 2018, EGAL had declared a cash dividend of EGP7.00/share (based on a share count of 275mn), drawing from reserves in order to restructure the total equity. This totaled cash dividends of EGP10.00/share (based on a share count of 275mn) for FY2017/18, implying a 29% yield on a payout ratio of more than 101% vs. 24% in FY2016/17. We expect these rates to normalize in the future. Given the sustainability of operating cash flows and the minimal capex required, the payout ratio (as per our base case) is expected to average c.60%, implying a dividend yield of 8.8% for FY2018/19.

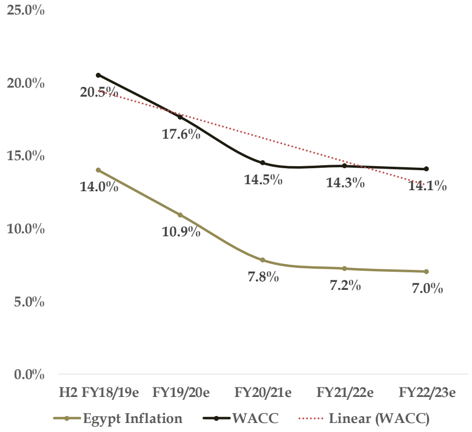
The Valuation

We mainly used the discounted cash flow (DCF) model to value EGAL. We built a two-stage forecasting model (a high-growth period through FY2022/23, followed by a stable-growth terminal period). Our DCF model discounts free cash flows to the firm (FCFFs) based on a moving weighted average cost of capital (WACC) which dwindles over time with the change in the cost of equity (COE). We note that marketable securities and non-operating investments represent c.25% of our equity valuation.

We used a moving WACC, declining from 20.5% in FY2018/19 to 14.1% by the terminal year. The fall in WACC mirrors the change in COE which follows inflation rates across our forecast horizon as equity represents c.97% of capital. We calculated COE based on the following elements:

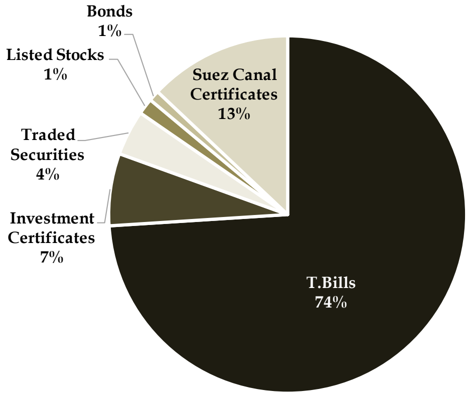
- Average US 10-year Treasury yield of 2.6%.
- Average inflation differential (between Egypt and USA) of 7.0%.
- Adjusted beta of 0.85.
- US equity risk premium (ERP) of 6.0%.
- Average country risk premium (CRP) of 3.8% (applied on local sales portion) as implied by Egypt's average CDS spread of 3.3%, levered up by 23% to account for inherent volatility in equity returns.

WACC follows inflation rates decline



Source: SHUAA Securities Egypt estimates.

Other investments, including marketable securities (EGP2.32bn, as of 31 December 2018)



Source: Company reports.

Recommendation, Catalysts, & Risks

- **Recommendation:** Based on our DCF model, our 12M PT is EGP26.4/share. Hence, we initiate coverage with a Neutral / High Risk (an expected total return of 18%).
- **Catalysts:** Any reduction in electricity consumption or kWh cost will improve operating margins. Any expansion in the spread between aluminum and alumina prices will enhance profitability.
- **Risks:** The high volatility of metal prices is a high risk. Also, the implementation of a new capacity expansion project without establishing the solar power plant could hurt valuation.

The Dream

- **Implementation of the solar power plant** would be the strongest push for the stock as it could add from 21% to 104% to our 12M PT (EGP5.5-27.5/share) based on the solar plant effective capacity.
- **Exploiting the unutilized resources** through developing the unutilized land and constructing solar power plants.
- **Global trade war resolution** would allow the global economy to rebound, raising aluminum prices which will stretch EGAL's margins and hence valuation.

The Nightmare

- **A slowdown in global economy** would hamper demand and mark down aluminum selling prices, while unexpected shutdowns of global alumina refineries would pressure operating margins.
- **Further increases in electricity prices** would undermine profit margins.

The Valuation *(Cont.'d)*

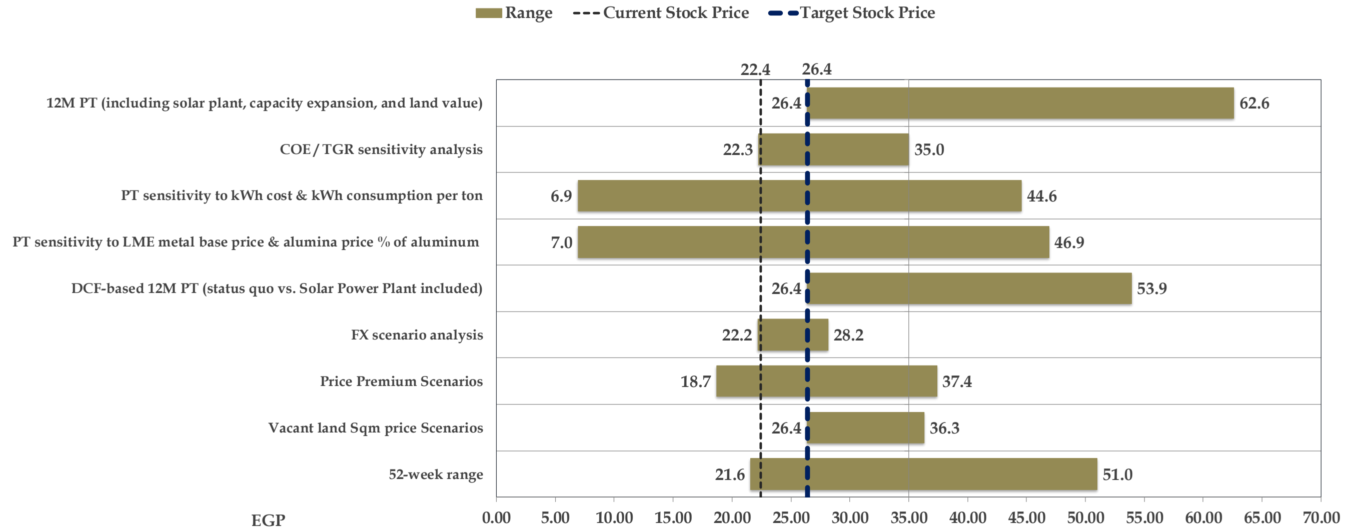
DCF valuation

Economic Profit Analysis		H2 FY18/19e	FY19/20e	FY20/21e	FY21/22e	FY22/23e	TV
ROIC *		16.6%	19.5%	16.6%	17.1%	18.0%	18.2%
WACC		20.5%	17.6%	14.5%	14.3%	14.1%	14.1%
Terminal growth rate							3.0%
EGPmn, except per-share figures		**H2 FY18/19e**	**FY19/20e**	**FY20/21e**	**FY21/22e**	**FY22/23e**	**Terminal**
NOPLAT		500	1,229	1,077	1,144	1,249	
Depreciation		165	333	325	319	316	
Gross Cash Flow		***665***	***1,563***	***1,401***	***1,463***	***1,565***	
Change in Operating Working Capital		616	(180)	(254)	(222)	(226)	
Capital Expenditures		(155)	(268)	(282)	(298)	(394)	
Change in other operating assets		0	0	0	0	0	
Gross Investment		***461***	***(447)***	***(536)***	***(520)***	***(621)***	
Non-Appropriation Items		***(229)***	***(113)***	***(103)***	***(126)***	***(136)***	
FCFF/TV		**896**	**1,002**	**762**	**818**	**809**	**7,514**
Present value FCFF		**848**	**806**	**535**	**503**	**436**	**4,049**
DCF Enterprise Value	**7,177**						
Less: (Net Debt)/Cash	(300)						
Less: Minority Interest	0						
Add: Other Investments	**2,317**						
DCF Equity Value	**9,195**						
Less: Distributed Dividends	-						
Equity Value	**9,195**						
Number of Shares Outstanding	413						
FV/share (EGP)	**22.3**						
1-year PT (EGP)	**26.4**						

- ROIC denoted under H2 FY2018/19e is for full fiscal year.
- Net Debt and Other investment balances as of H1 FY2018/19.

Source: SHUAA Securities Egypt estimates.

12M PT sensitivity to different scenarios



Source: SHUAA Securities Egypt estimates.

The Valuation *(Cont.'d)*

Sensitivity analysis

- Our fair value is sensitive to **aluminum base price** and **alumina cost.** Therefore, we conducted a sensitivity analysis for the expected value of aluminum base price and alumina price against aluminum base price, which resulted in **a 12M PT range of EGP7.0–46.9/share.** We also ran a sensitivity analysis between **COE** and **terminal growth rate**, which produced **a 12M PT range of EGP22.3–35.0/share.**
- Electricity cost has a considerable weight of 42% in EGAL's cash COGS in FY2018/19e; hence our valuation is highly sensitive to **kWh cost** and **electricity consumption** for each aluminum ton. Therefore, we carried out a sensitivity analysis for both items, which arrived at **a 12M PT range of EGP6.9–44.6/share.**

Scenario analysis

- **EGP/USD rate scenario analysis:** Our fair value is also highly sensitive to the EGP/USD exchange rate, given that 100% of the company's top line and c.90% of COGS are either denominated in or linked to USD. Therefore, we conducted **FX scenario analysis** to model the variation in the company's valuation and profitability in light of different paths in the EGP/USD exchange rate outlook. This analysis resulted in **a 12M PT range of EGP22.2–28.2/share.**
- **Premium scenario analysis:** The percentage of price premium has a significant impact on EGAL's revenue and operating margins. We performed a scenario analysis to model the change in EGAL's valuation and profitability in light of **different premiums**. This resulted in **a 12M PT of EGP37.4/share** if the company sold its products at a 21% premium (with higher value added) on LME base price and **EGP18.7/share** if the price premium was 12%.
- **A scenario analysis of a vacant land and a solar plant:** We conducted a scenario analysis for the future decisions regarding the **unutilized vacant land** *and* the **implementation of a solar power plant**. The analysis reflected the change in the market value of the vacant land, the impact of utilizing it through the construction of a solar power plant, and the change that would occur in its effective capacity. The **land value could add EGP5.0-9.9/share to our 12M PT**, while the different scenarios of the **solar plant effective capacity showed an additional value of EGP5.5–27.5/share to our 12M PT.**

PT sensitivity to LME metal base price & alumina price % of aluminum

Aluminum Base Price	Alumina % of Aluminum Base Price				
	-1.0%	-0.5%	Base Case	+0.5%	+1.0%
+10%	46.9	44.3	41.6	39.0	36.3
+5%	39.1	36.5	34.0	31.5	28.9
Base Case	31.2	28.8	26.4	24.0	21.6
-5%	23.4	21.1	18.8	16.5	14.3
-10%	15.5	13.4	11.3	9.1	7.0

Source: SHUAA Securities Egypt estimates.

PT sensitivity to COE & TGR

Cost of Equity (COE)	Terminal Growth Rate (TGR)				
	1.0%	2.0%	3.0%	4.0%	5.0%
+2%	22.3	22.9	23.6	24.5	25.5
+1%	23.3	24.0	24.9	25.9	27.2
Base Case	24.4	25.3	26.4	27.7	29.2
-1%	25.8	26.9	28.2	29.8	31.8
-2%	27.3	28.7	30.3	32.4	35.0

Source: SHUAA Securities Egypt estimates.

PT sensitivity to kWh cost & kWh consumption per ton

Electricity Consumption Per Ton	Electricity Price (EGP/kWh)				
	-10%	-5%	Base Case	+5%	+10%
-1,000 kWh	44.6	39.4	34.2	29.0	23.8
-500 kWh	41.0	35.7	30.3	24.9	19.5
Base Case	37.5	31.9	26.4	20.8	15.3
+500 kWh	34.0	28.2	22.5	16.8	11.2
+1,000 kWh	30.4	24.5	18.6	12.8	6.9

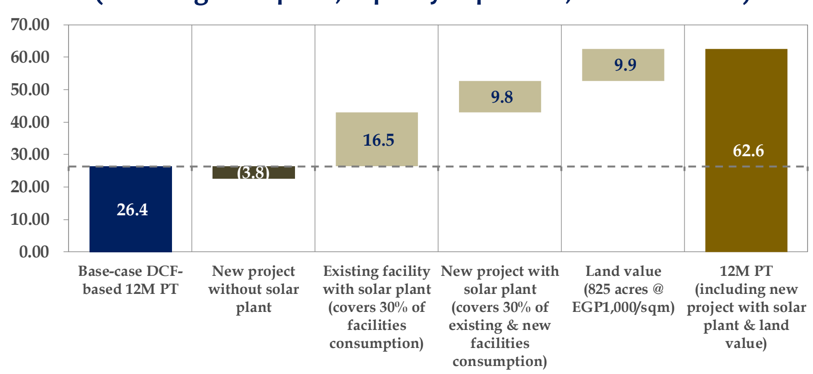
Source: SHUAA Securities Egypt estimates.

Vacant land scenarios

Vacant land sqm price scenarios	Area (acres)	Area (sqm 000)	Value (EGP mn)	Value Per Share	Upside % on FV	12M PT
EGP1,000/Sqm	825	3,465	3,460	8.39	38%	36.3
EGP500/Sqm	825	3,465	1,728	4.19	16%	31.3

Source: SHUAA Securities Egypt estimates.

12M PT (including solar plant, capacity expansion, and land value)



Source: SHUAA Securities Egypt estimates.

The Valuation *(Cont.'d)*

FX scenario analysis

EGPmn	12M PT (EGP)	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e	FY21/22e	FY22/23e	5Y-CAGR
Bull Case										
EGP:USD		7.99	15.05	17.67	17.80	23.17	24.44	25.65	26.86	**8.7%**
Revenues	28.2	**5,006**	**9,095**	**13,502**	**13,055**	**17,202**	**18,139**	**19,127**	**20,131**	**8.3%**
EBITDA		**179**	**2,284**	**3,327**	**1,574**	**2,017**	**1,755**	**2,146**	**2,313**	**-7.0%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	11.2%	11.5%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,594**	**1,365**	**1,704**	**1,874**	**-7.1%**
Base Case										
EGP:USD		7.99	15.05	17.67	17.80	19.31	20.36	21.37	22.39	4.9%
Revenues	26.4	**5,006**	**9,095**	**13,502**	**13,055**	**14,335**	**15,116**	**15,939**	**16,775**	**4.4%**
EBITDA		**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**1,788**	**1,928**	**-10.3%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	11.2%	11.5%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**1,481**	**1,597**	**-10.1%**
Bear Case										
EGP:USD		7.99	15.05	17.67	14.24	15.45	16.29	17.10	17.91	0.3%
Revenues	22.2	**5,006**	**9,095**	**13,502**	**10,444**	**11,468**	**12,093**	**12,752**	**13,420**	**-0.1%**
EBITDA		**179**	**2,284**	**3,327**	**295**	**1,337**	**1,162**	**1,422**	**1,534**	**-14.3%**
EBITDA margin		3.6%	25.1%	24.6%	2.8%	11.7%	9.6%	11.2%	11.4%	
Net income		**85**	**1,733**	**2,716**	**363**	**1,063**	**998**	**1,214**	**1,312**	**-13.5%**

Source: Company reports, SHUAA Securities Egypt estimates.

Price premium scenarios

EGPmn	12M PT (EGP)	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e	FY21/22e	FY22/23e	5Y-CAGR
Bull Case										
Price premium		21%	14%	12%	21%	21%	21%	21%	21%	
Revenues	37.4	**5,006**	**9,095**	**13,502**	**13,605**	**14,938**	**15,752**	**16,611**	**17,482**	**5.3%**
EBITDA		**179**	**2,284**	**3,327**	**2,117**	**2,269**	**2,083**	**2,451**	**2,626**	**-4.6%**
EBITDA margin		3.6%	25.1%	24.6%	15.6%	15.2%	13.2%	14.8%	15.0%	
Net income		**85**	**1,733**	**2,716**	**1,784**	**1,793**	**1,706**	**2,003**	**2,148**	**-4.6%**
Base Case										
Price premium		21%	14%	12%	16%	16%	16%	16%	16%	
Revenues	26.4	**5,006**	**9,095**	**13,502**	**13,055**	**14,335**	**15,116**	**15,939**	**16,775**	**4.4%**
EBITDA		**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**1,788**	**1,928**	**-10.3%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	11.2%	11.5%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**1,481**	**1,597**	**-10.1%**
Bear Case										
Price premium		21%	14%	12%	12%	12%	12%	12%	12%	
Revenues	18.7	**5,006**	**9,095**	**13,502**	**12,670**	**13,912**	**14,670**	**15,469**	**16,280**	**3.8%**
EBITDA		**179**	**2,284**	**3,327**	**1,193**	**1,268**	**1,027**	**1,324**	**1,439**	**-15.4%**
EBITDA margin		3.6%	25.1%	24.6%	9.4%	9.1%	7.0%	8.6%	8.8%	
Net income		**85**	**1,733**	**2,716**	**1,064**	**1,009**	**838**	**1,098**	**1,212**	**-14.9%**

Source: Company reports, SHUAA Securities Egypt estimates.

Solar power plant scenarios

EGPmn	12M PT (EGP)	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e	FY21/22e	FY22/23e	5Y-CAGR
Base Case										
Solar Power Plant 0% of power consumption										
EBITDA	26.4	**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**1,788**	**1,928**	**-10.3%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	11.2%	11.5%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**1,481**	**1,597**	**-10.1%**
Solar Power Plant 10% of power consumption										
EBITDA	31.9	**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**2,200**	**2,359**	**-6.6%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	13.8%	14.1%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**1,803**	**1,938**	**-6.5%**
Solar Power Plant 30% of power consumption										
EBITDA	42.9	**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**3,024**	**3,222**	**-0.6%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	19.0%	19.2%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**2,446**	**2,620**	**-0.7%**
Solar Power Plant 50% of power consumption										
EBITDA	53.9	**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**	**3,847**	**4,085**	**4.2%**
EBITDA margin		3.6%	25.1%	24.6%	12.1%	11.7%	9.7%	24.1%	24.3%	
Net income		**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**	**3,088**	**3,302**	**4.0%**

Source: Company reports, SHUAA Securities Egypt estimates.

The Valuation *(Cont.'d)*

NPV sensitivity to aluminum base price and WACC

Aluminum Base Price	WACC				
	-2%	+1%	Base Case	+1%	+2%
+10%	21.7	18.7	16.2	14.1	12.4
+5%	12.8	10.4	8.4	6.8	5.3
Base Case	3.9	2.1	**0.6**	(0.6)	(1.7)
-5%	(5.0)	(6.2)	(7.2)	(8.0)	(8.7)
-10%	(13.9)	(14.5)	(15.0)	(15.4)	(15.7)

Source: Company reports, SHUAA Securities Egypt estimates.

NPV sensitivity to kWh consumption & project capex (base-case scenario)

Project's Initial Capex	KW Consumption				
	-1,000 KW	-500 KW	Base Case	+500 KW	+1,000 KW
-USD100mn	8.8	6.6	4.5	2.3	0.1
-USD50mn	6.9	4.7	2.5	0.4	(1.8)
Base Case	5.0	2.8	**0.6**	(1.5)	(3.7)
+USD50mn	3.0	0.9	(1.3)	(3.5)	(5.6)
+USD100mn	1.1	(1.1)	(3.2)	(5.4)	(7.6)

Source: SHUAA Securities Egypt estimates.

Expansion project (250,000 tons additional capacity)

- The project's initial cost will be c.USD600mn, according to the management. We expect the time frame required for launching the new capacity expansion project to be around three years. Seventy percent of the project will be financed by loans and 30% by equity. Using an average WACC of 11.7%, we arrived at a net present value (NPV) of EGP259mn. Hence, according to the preliminary information we have, and in view of the expected electricity and aluminum prices over the FY2020/21-FY2021/22 period, we expect the expansion plan to increase EGAL's fair value by EGP0.6/share assuming that the solar power plant implemented and covered 10% of the project electricity consumption. **We note that our base case valuation scenario did not include this major capex and hence the new capacity. Also, we note that the project will not be value accretive if the solar power plant is not implemented.**
- The project's NPV is sensitive to (a) applied WACC, (b) applied aluminum base price, (c) the new production line's electricity consumption, and (d) the project's major capex. Therefore, we conducted a sensitivity analysis for **WACC** and **applied aluminum base price**, which resulted in an NPV range of a negative EGP15.7/share to a positive EGP21.7/share. Also, we produced a sensitivity analysis for the **project's electricity consumption** and **initial capex**, which pointed to an NPV range of a negative EGP7.6/share to a positive EGP8.8/share. **Without the implementation of the solar power station, the NPV range would be from a negative EGP11.7/share to a positive EGP5.2/share.**

The project's net present value after implementation of the solar power plant

Economic profit analysis	FY18/19	FY19/20	FY20/21	FY21/22	FY22/23	FY23/24	FY24/25	FY25/26	FY26/27	FY27/28	Terminal
ROIC	0.0%	0.0%	0.0%	3.5%	12.7%	13.2%	13.7%	14.2%	14.7%	15.1%	16.0%
WACC	12.4%	11.2%	9.9%	9.7%	10.6%	11.2%	11.8%	12.5%	13.3%	14.1%	14.1%
Terminal growth rate											3.0%
EGPmn, except per-share figures	**FY18/19**	**FY19/20**	**FY20/21**	**FY21/22**	**FY22/23**	**FY23/24**	**FY24/25**	**FY25/26**	**FY26/27**	**FY27/28**	**Terminal**
NOPLAT	-	-	-	439	1,833	1,920	2,012	2,107	2,207	2,311	2,380
Depreciation	-	-	-	88	361	378	396	415	435	456	
Gross Cash Flow	-	-	-	527	2,194	2,299	2,408	2,522	2,642	2,766	
Change in Operating Working Capital	-	-	-	(645)	(2,014)	(126)	(132)	(139)	(145)	(152)	
Capital Expenditures	(1,068)	(4,635)	(6,109)	(88)	(361)	(378)	(396)	(415)	(435)	(547)	
Gross Investment	(1,068)	(4,635)	(6,109)	(732)	(2,376)	(505)	(529)	(554)	(580)	(699)	
Non-Appropriation Items	-	-	-	-	(54)	(124)	(138)	(153)	(169)	(186)	
FCFF/TV	**(1,068)**	**(4,635)**	**(6,109)**	**(205)**	**(235)**	**1,670**	**1,741**	**1,816**	**1,893**	**1,881**	**17,423**
Present value FCFF	**(918)**	**(3,584)**	**(4,297)**	**(132)**	**(136)**	**872**	**813**	**753**	**693**	**604**	**5,592**

Net Present Value	**259**
Number of Shares Outstanding	413
NPV/share (EGP)	**0.6**
IRR	**11.0%**
Upside on FV	**2.8%**

Source: SHUAA Securities Egypt estimates.

NPV sensitivity to kWh consumption & project capex (with implementation of solar power station covering 30% of project's electricity consumption

Project's Initial Capex	KW Consumption				
	-1,000 KW	-500 KW	Base Case	+500 KW	+1,000 KW
-USD100mn	15.8	13.9	12.1	10.2	8.3
-USD50mn	13.9	12.0	10.2	8.3	6.4
Base Case	12.0	10.1	**8.3**	6.4	4.5
+USD50mn	10.1	8.2	6.3	4.5	2.6
+USD100mn	8.2	6.3	4.4	2.5	0.6

Source: SHUAA Securities Egypt estimates.

NPV sensitivity to kWh consumption & project capex (without the implementation of solar power station)

Project's Initial Capex	KW Consumption				
	-1,000 KW	-500 KW	Base Case	+500 KW	+1,000 KW
-USD100mn	5.2	2.9	0.7	(1.6)	(3.9)
-USD50mn	3.3	1.0	(1.3)	(3.6)	(5.9)
Base Case	1.4	(0.9)	**(3.2)**	(5.5)	(7.8)
+USD50mn	(0.5)	(2.8)	(5.1)	(7.4)	(9.7)
+USD100mn	(2.4)	(4.7)	(7.0)	(9.4)	(11.7)

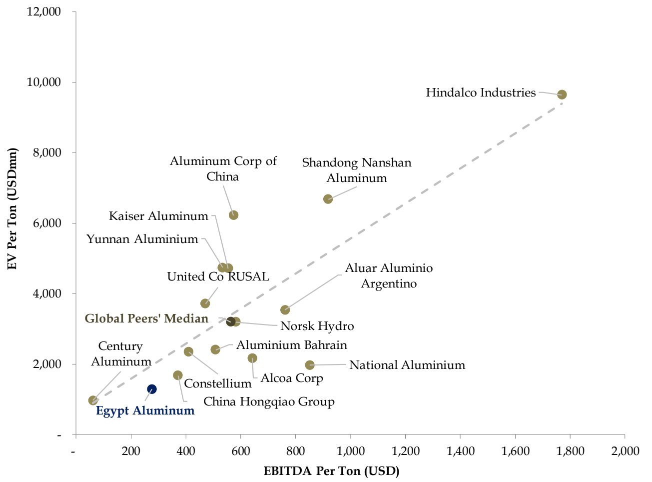
Source: SHUAA Securities Egypt estimates

The Valuation *(Cont.'d)*

Comparable analysis

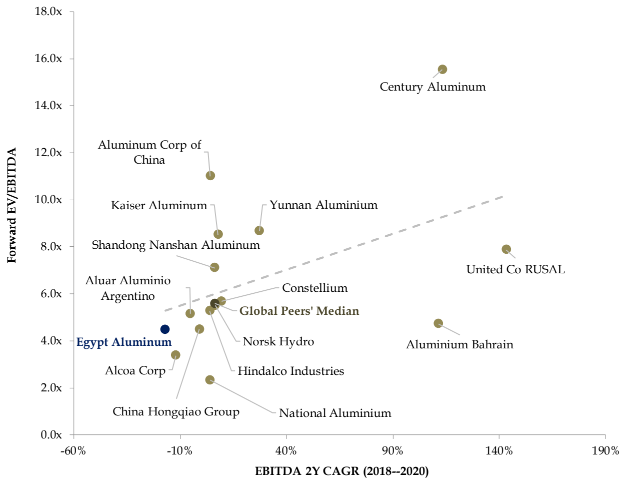
- Although the aluminum industry is global in terms of demand, global producers are subject to many factors affecting the validity of a relative valuation. These factors are (1) the vertical integration in value chain, as many aluminum producers own alumina refineries and mining bauxite, (2) variance of electricity cost in different countries, and (3) the capital structure and labor costs across different countries. Thus, we opted to set our 12-month price target for EGAL using our DCF valuation. However, for the sake of comparison, we illustrate below the valuation multiples, mainly EV/EBITDA and EV/ton, of EGAL's global peers.
- Currently, EGAL is traded at a 20% discount to global median forward EV/EBITDA of 5.6x. Also, EGAL's forward EV/ton is USD1,285 which is 60% lower than the global median. EGAL's forward EBITDA/ton is USD276 which is 51% lower than global median.

Current EV/ton and forward EBITDA/ton



Source: Bloomberg, SHUAA Securities Egypt estimates.

Forward EV/EBITDA and 2-year EBITDA CAGR



Source: Bloomberg, SHUAA Securities Egypt estimates.

Peers' analysis

Country	Company name	Mkt cap (USD mn)	P/E 2017	P/E 2018	P/E 2019	P/E 2020	EV/EBITDA 2017	EV/EBITDA 2018	EV/EBITDA 2019	EV/EBITDA 2020	EBITDA 2Y CAGR	EV/Ton (USD)	EBITDA Per Ton (USD)
Russia	United Co RUSAL	7,068	n/a	n/a	3.8x	3.3x	n/a	n/a	7.9x	7.0x	143%	3,711	471
United States	Century Aluminum	735	40.4x	n/a	n/a	6.7x	9.9x	28.3x	15.5x	4.3x	113%	964	62
Argentina	Aluar Aluminio Argentino	1,232	15.3x	15.9x	7.8x	7.2x	8.1x	8.3x	5.1x	4.9x	-5%	3,541	762
China	Yunnan Aluminium	1,892	40.9x	n/a	23.0x	12.6x	15.7x	n/a	8.7x	7.0x	27%	4,741	533
United States	Alcoa Corp	5,229	19.0x	7.1x	14.8x	9.2x	6.0x	3.0x	3.4x	3.3x	-12%	2,168	643
Norway	Norsk Hydro	8,336	14.5x	18.2x	13.8x	9.3x	7.5x	5.9x	5.5x	4.3x	7%	3,196	582
India	Hindalco Industries	6,500	21.2x	7.9x	7.7x	7.7x	6.6x	6.3x	5.3x	5.3x	4%	9,645	1,770
India	National Aluminium	1,415	25.8x	9.6x	5.6x	8.9x	10.5x	6.8x	2.3x	3.9x	4%	1,969	852
Bahrain	Aluminium Bahrain	1,597	9.5x	14.3x	8.2x	4.0x	8.0x	15.7x	4.7x	2.9x	111%	2,403	509
China	Jiaozuo Wanfang Aluminum	855	63.5x	n/a	n/a	n/a	53.7x	n/a	n/a	n/a	n/a	2,643	n/a
China	China Hongqiao Group	5,909	10.5x	n/a	6.3x	5.5x	6.2x	n/a	4.5x	4.7x	-1%	1,677	371
Netherlands	Constellium	1,227	n/a	8.2x	7.9x	6.1x	6.1x	4.7x	5.7x	5.1x	9%	2,341	410
China	Shandong Nanshan Aluminum	4,782	21.6x	n/a	12.0x	10.4x	8.8x	n/a	7.1x	6.7x	6%	6,681	919
China	Aluminum Corp of China	9,801	51.7x	n/a	21.9x	13.2x	11.6x	n/a	11.0x	9.7x	4%	6,225	574
United States	Kaiser Aluminum	1,679	21.4x	15.0x	14.8x	13.6x	10.0x	9.0x	8.5x	8.0x	8%	4,718	554
Egypt	**Egypt Aluminum**	**520**	**2.2x**	**5.1x**	**6.8x**	**6.9x**	**0.5x**	**3.3x**	**4.5x**	**3.9x**	**-17%**	**1,285**	**276**
Global Peers' Average			**27.3x**	**12.0x**	**11.4x**	**8.4x**	**12.1x**	**9.8x**	**6.8x**	**5.5x**	**30%**	**3,775**	**644**
Global Peers' Median			**21.4x**	**11.9x**	**8.2x**	**8.3x**	**8.4x**	**6.8x**	**5.6x**	**5.0x**	**6%**	**3,196**	**564**
Premium (discount) from median			**(90%)**	**(57%)**	**(17%)**	**(16%)**	**(94%)**	**(51%)**	**(20%)**	**(22%)**		**(60%)**	**(51%)**

Source: Bloomberg, SHUAA Securities Egypt estimates

The Financial Model

Income Statement (EGPmn)						
FY End: June	**FY15/16a**	**FY16/17a**	**FY17/18a**	**FY18/19e**	**FY19/20e**	**FY20/21e**
Total Revenue	**5,006**	**9,095**	**13,502**	**13,055**	**14,335**	**15,116**
COGS	(4,732)	(6,401)	(10,033)	(11,320)	(12,296)	(13,277)
GP	**275**	**2,694**	**3,470**	**1,735**	**2,038**	**1,839**
Other operating (exp.)/ Inc.	(96)	(410)	(143)	(162)	(358)	(377)
EBITDA	**179**	**2,284**	**3,327**	**1,574**	**1,681**	**1,462**
Depreciation & Amortization	(331)	(351)	(362)	(347)	(333)	(325)
Interest Income	8	16	22	7	5	1
Investment Income	127	275	545	556	413	434
Net non-operating income., taxes	29	(489)	(764)	(429)	(433)	(353)
NP Before XO & MI	**11**	**1,735**	**2,768**	**1,361**	**1,332**	**1,219**
XO & Minority Interest	74	(2)	(52)	-	-	-
Net Income	**85**	**1,733**	**2,716**	**1,361**	**1,332**	**1,219**

Balance Sheet (EGPmn)						
FY End: June	**FY15/16a**	**FY16/17a**	**FY17/18a**	**FY18/19e**	**FY19/20e**	**FY20/21e**
Current Assets						
Total Cash	382	1,419	469	304	34	331
Marketable securities	1,117	1,651	2,669	2,169	2,669	2,669
Trade & other receivables	440	850	1,046	1,116	1,226	1,293
Inventory	2,044	2,669	3,204	3,940	4,120	4,427
Other Current Assets	101	203	330	285	313	330
Total Current Assets	**4,084**	**6,791**	**7,718**	**7,815**	**8,362**	**9,051**
Fixed Assets (net)	2,886	2,710	2,600	2,496	2,431	2,388
Other Non-Current Assets	416	437	389	433	433	433
Total Assets	**7,385**	**9,938**	**10,707**	**10,744**	**11,225**	**11,872**
Liabilities & Equity						
Short-Term Debt	19	384	213	277	41	44
Current Portion of LT Debt	-	-	-	-	-	-
Accounts Payable	1,103	547	1,044	1,072	1,165	1,258
Other Current Liabilities	159	641	867	513	557	602
Total Current Liabilities	**1,281**	**1,572**	**2,124**	**1,863**	**1,763**	**1,903**
Long-Term Debt	-	-	-	-	-	-
Other Non-Current Liabilities	600	797	800	793	971	1,161
Total Liabilities	**1,881**	**2,369**	**2,924**	**2,656**	**2,734**	**3,065**
Minority Interest	-	-	-	-	-	-
Total Equity	**5,505**	**7,569**	**7,783**	**8,089**	**8,491**	**8,807**
Total Liabilities & Equity	**7,385**	**9,938**	**10,707**	**10,744**	**11,225**	**11,872**

Cash Flow Statement (EGPmn)						
FY End: June	**FY15/16a**	**FY16/17a**	**FY17/18a**	**FY18/19e**	**FY19/20e**	**FY20/21e**
Cash from Operating	(1,117)	762	2,421	83	1,292	1,045
Cash from Investing	(66)	(431)	(709)	778	(346)	160
Cash from Financing	1,403	707	(2,662)	(1,026)	(1,217)	(907)
Net Change in Cash	**219**	**1,037**	**(950)**	**(165)**	**(270)**	**298**
Capex	(181)	(189)	(204)	(295)	(268)	(282)

Source: Company data, SHUAA Securities Research estimates

Per-Share Data	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e
Price (adjusted)	2.3	9.2	33.8	22.4	22.4	22.4
# Shares (WA,in mn)	125	138	275	413	413	413
EPS (adjusted)	0.2	4.2	6.6	3.3	3.2	3.0
DPS (adjusted)	0.3	1.0	6.7	2.0	1.9	1.8
BVPS (adjusted)	13.3	18.3	18.9	19.6	20.6	21.4

Valuation Indicators	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e
PER (x)	11.2x	2.2x	5.1x	6.8x	6.9x	7.6x
PBV (x)	0.2x	0.5x	1.8x	1.1x	1.1x	1.1x
EV/Sales (x)	0.1x	0.3x	1.0x	0.7x	0.6x	0.6x
EV/EBITDA (x)	-3.0x	0.5x	3.3x	4.5x	3.9x	4.3x
Dividend Payout Ratio	162%	24%	101%	60%	60%	60%
Dividend Yield	14.5%	10.9%	19.7%	8.8%	8.6%	7.9%

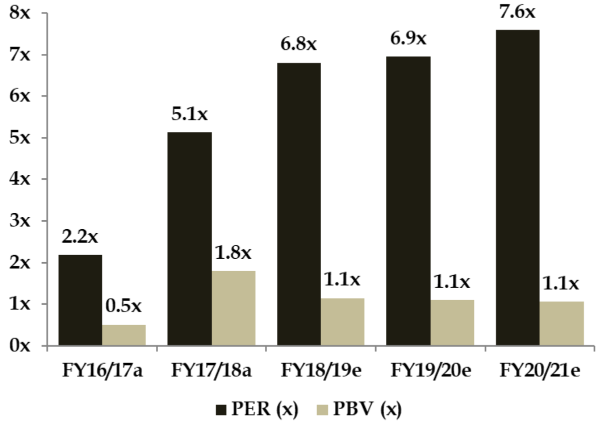
Profitability & Growth Ratios	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e
Revenue Growth	(5%)	82%	48%	(3%)	10%	5%
EBITDA Growth	(51%)	1179%	46%	(53%)	7%	(13%)
Adj EPS Growth	(54%)	1943%	57%	(50%)	(2%)	(9%)
GPM	5%	30%	26%	13%	14%	12%
EBITDA Margin	4%	25%	25%	12%	12%	10%
Net Margin	2%	19%	20%	10%	9%	8%
ROAE	2%	27%	35%	17%	16%	14%
ROAA	1%	20%	26%	13%	12%	11%

Liquidity & Solvency Multiples	FY15/16a	FY16/17a	FY17/18a	FY18/19e	FY19/20e	FY20/21e
Net Debt (Cash)	(363)	(1,035)	(256)	(26)	8	(287)
Net Debt/Equity	(7%)	(14%)	(3%)	(0%)	0%	(3%)
Net debt to EBITDA	-2.0x	-0.5x	-0.1x	0.0x	0.0x	-0.2x
Debt to Assets	0.00x	0.04x	0.02x	0.03x	0.00x	0.00x
Current ratio	3.2x	4.3x	3.6x	4.2x	4.7x	4.8x

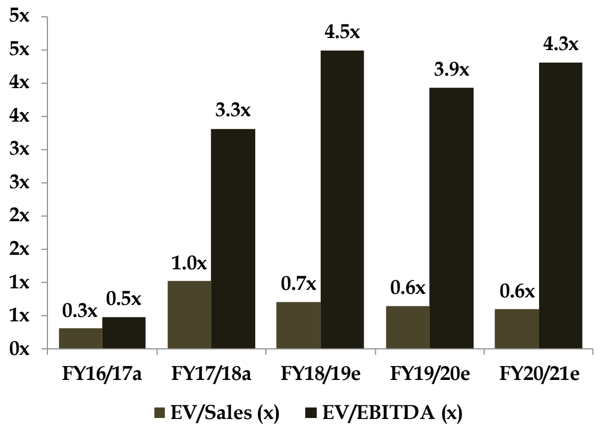
Consensus Estimates (EGPmn)	FY18/19e	FY19/20e	FY20/21e
Revenues	**13,754**	**14,441**	**17,551**
SHUAA Securities Egypt vs. Consensus	-5.1%	-0.7%	-13.9%
Net Income	**1,844**	**1,504**	**1,506**
SHUAA Securities Egypt vs. Consensus	-26.2%	-11.4%	-19.1%
Fwd PER (x), Last Price	6.8x	6.9x	7.6x
Fwd PER (x), 12M - Price Target	8.0x	8.2x	8.9x
Fwd DY (%), Last price	8.8%	8.6%	7.9%

a = Actual; e = Estimated — Share price at 14-Mar-19

Forward multiples to reflect the expected lower margins



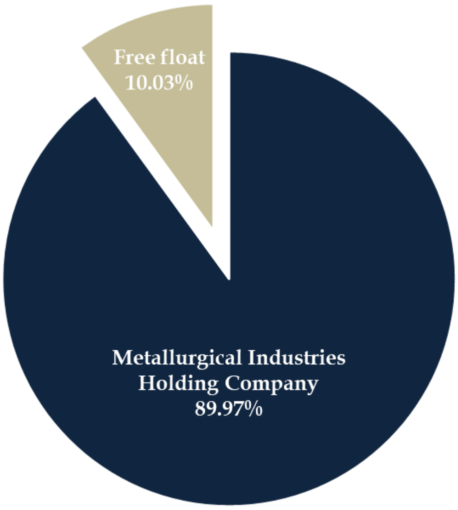
Source: Company reports, SHUAA Securities Egypt estimates.



Source: Company reports, SHUAA Securities Egypt estimates.

The Background

Shareholder structure



Source: Company reports.

EGAL is the sole producer of primary aluminum in Egypt with a total capacity of 320,000 tons per annum. The company plans to expand its capacity by 78% or 250,000 tons to serve local and global markets.

- **Egypt Aluminum (EGAL)** is a shareholding company established in July 1976 and has been listed on the Egyptian Exchange (EGX) since May 1997. EGALS's initial paid-in capital is EGP1.65bn distributed over 412.5mn ordinary shares with a par value of EGP4.00/share. EGAL operates within the materials sector, focusing on aluminum. It designs, manufactures, and markets an array of aluminum products. The company sells its products in local and global markets. In FY2017/18, exports represented c.59% of EGAL's total sales.
- EGAL's production plants are located in **Nag Hammadi**, which is about 100km north of **Luxor** in **Upper Egypt**. It benefits from the **High Dam**'s electricity generation plants. Also, this location gives the company easy access to **Safaga Port** which facilitates the operational logistics in the transportation of raw materials to the factory and the output delivery to the port.
- The main shareholder in EGAL is state-owned **Metallurgical Industries Holding Co. (MIHC)** with an 89.97% stake, while the remaining 10.03% is free float.
- EGAL's AGM, held on 8 October 2018, had approved a 50% stock dividend, thus raising its paid-in capital to EGP1.65bn. The record date for those bonus shares was 24 December 2018. The main purpose of this capital hike was to retain the available cash for the new expansions.

The Leadership

EGAL's management team continues to work on achieving the strategic goals that ensure the company runs highly-efficient operations and expands in parallel with the current developments in the aluminum industry aimed to satisfy the local market and penetrate global markets.

- EGAL's board is comprised of five members:
  1. **Eng. Abdel-Zaher Hassan, *Chairman* & *Managing Director*,** representing **MIHC**.
  2. **Moamen Mustafa Yassin Ahmed, *Board Member*,** representing **MIHC**.
  3. **Tarek Abdel Raouf Magdy Fayd, *Board Member*,** non-executive.
  4. **Khaled Mohammed El Dustawi, *Board Member*,** representing **Al-Ahly Capital Holding Co.**
  5. **Mohamed Abdul-Hadi Sayed Mahmoud, *Board Member*,** representing **MIHC**.

Disclosure Appendix

METHODOLOGY: When setting an investment and risk ratings, we utilize all publicly-available sources to build an understanding of the issuer's business model and hence its intrinsic value based on one or more valuation methods. To reach a valuation, we assess factors that we deem relevant, including—but not limited to—macro, sector, and company-specific aspects.

INVESTMENT RATING: Depending on each issuer's business model, we may use (1) an income approach, (2) a markets-based approach, (3) an asset-based approach, and/or (4) sum-of-the-parts approach. In certain cases where we do not have our own financial and valuation models, we may present the consensus rating/view. For all securities actively covered, we assign one of three investment ratings (Overweight, Neutral, or Underweight) depending on the security's expected total return (price + yield) over a 12-month investment horizon as compared to the security's Required Rate of Return (RRR) as calculated using the Capital Asset Pricing Model (CAPM) and adjusted for the Risk Rating we assign to the security. Please read below for more details about our Risk Rating. Our assigned fair values are subjective and are estimates of the analysts where the security(ies) covered will trade within the next 12 months. The assigned investment rating/fair value is only valid for a maximum of three months from the date it was set.

RISK RATING: Based on the overall risk profile of each issuer/security covered, we assign one of three risk ratings (High, Moderate, or Low). The risk rating is a function of a weighted assessment of the issuer's (1) sector, (2) corporate profile, and (3) security and related volatility. The assigned risk rating is only valid for a maximum of three months from the date it was set.

Analyst Certification

I (we), **AbdelRahman Wahba**, Equity Analyst, employed with SHUAA Securities Egypt, and author(s) to this document, hereby certify that all the views expressed in this research report accurately reflect my (our) views about the subject issuer(s) or security(ies). I (we) also certify that no part of my (our) compensation was, is or will be directly or indirectly related to the specific recommendation(s) or view(s) expressed in this report. Also, I (we) certify that neither myself (ourselves) nor any of my (our) close relatives hold or trade into the subject securities.

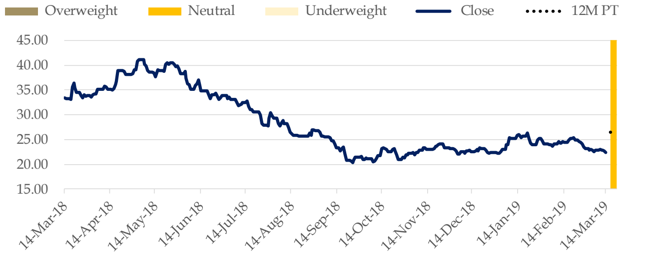
Head of Research Certification

I, **Amr Hussein Elalfy**, Head of Research of SHUAA Securities Egypt, confirm that I have vetted the information and all the views expressed by the Analyst in this document about the subject issuer(s) or security(ies). I also certify that the author of this document, has not received any compensation directly related to the contents of the document.

Return / Risk Profile

	If Total Return is ...	Investment Rating		
		Overweight	**Neutral**	**Underweight**
Risk Rating	**Low**	Higher than RRR	Between RRR and 20% of RRR	Lower than 20% of RRR
Risk Rating	**Moderate**	Higher than RRR	Between RRR and 40% of RRR	Lower than 40% of RRR
Risk Rating	**High**	Higher than RRR	Between RRR and 60% of RRR	Lower than 60% of RRR
	Not Rated (NR)	We have decided not to publish a rating on the stock due to certain circumstances related to the company (i.e. special situations).		
	Not Covered (NC)	We do not currently cover this stock or we are restricted from coverage for regulatory reasons.		

Investment Rating & Price Target History



Rating history

From	To	Date	Analyst
NC	Neutral / High Risk	17-Mar-19	AbdelRahman Wahba

12-month price target history

From	To	Date	Analyst
None	26.40	17-Mar-19	AbdelRahman Wahba

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