

First Solar, Inc.
NASDAQ:FSLR

Analyst: Alexandre Thiam
Sector: Energy

BUY

Price Target: \$51.25

Key Statistics as of 10/21/2016

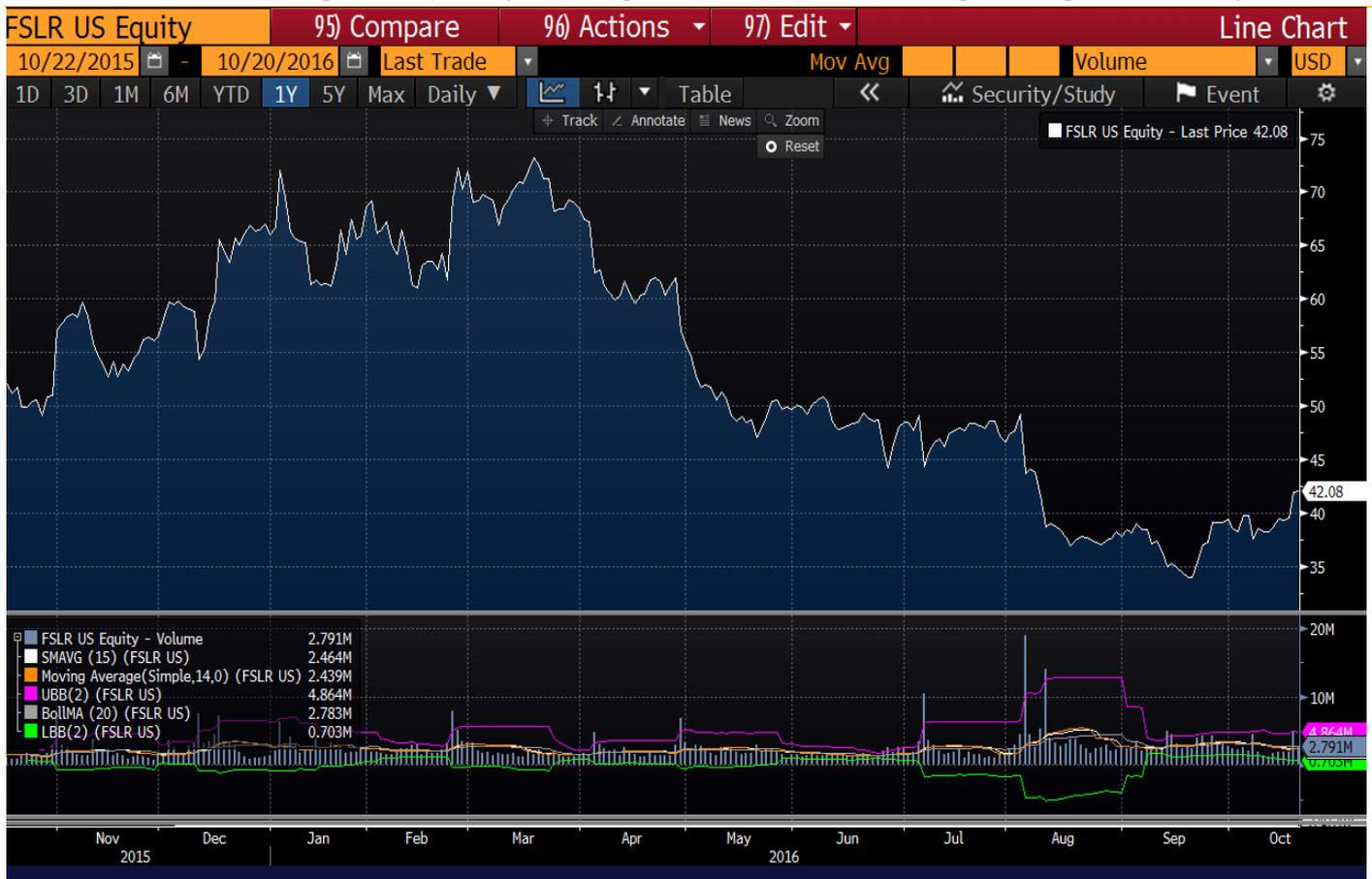
Market Price: \$42.08
Industry: Semiconductor Equipment
Market Cap: \$4.28B
52-Week Range: \$33.74-\$74.29
Beta: 1.75

Catalysts:

- **Short-term:** The Elections: Clinton is a pro-Solar so elections will have an impact on price.
- Earning call release date 10/27/2016
- **Medium-term:** Increase or stabilization in number of bookings/installations per year.

Company Description:

First Solar, Inc is a leading provider of comprehensive photovoltaic, also referred as PV and solar energy solutions. It is a 26 year old company that was rebranded in 1999 as First Solar, Inc. The company design, manufacture, and sell PV solar unit to residential and non-residential clients and is based in Tempe, Arizona. First Solar specializes in thin-film semiconductor technology and sell Solar panels that uses this designed technology. The company also operate maintenance of these PV systems and also any type of solar installations from a different manufacturer. First Solar is the Largest Photovoltaic solar module producer. The company operates in different countries such as Germany, Malaysia and Honduras. First Solar went public 10 years ago in 2006 priced at \$28.30 and reached a peak in April 2008 trading at \$291.99.



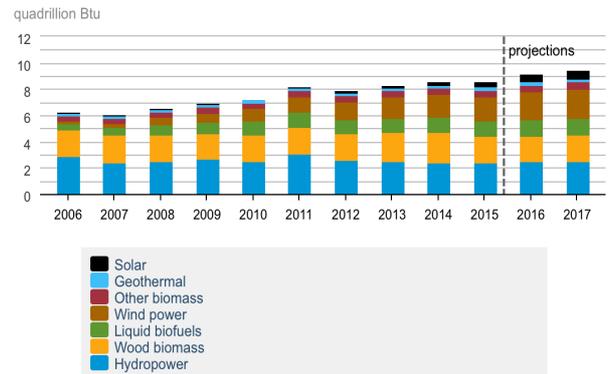
Thesis

- First Solar is probably the leader in providing Solar panels in the United States and is most certainly viewed as a pioneer in the market regarding the fact the most of its competitors are 10 years old companies on average. The company manages to offer an excellent quality at a excellent price. The industry average is around \$3/watt when FSLR manages to achieve of an historical average cost of \$2.90/watt.
- The industry relies solely on the number of bookings that the solar energy solutions provider receives, and this is probably the key data that analyst and investors would be looking for on the call (earnings).
- The business of Solar panel pulled back these recent years and is set to be higher within the next years. Concerns over nuclear are back in highlight and the solar industry innovated to offer more viable and affordable technologies and systems.

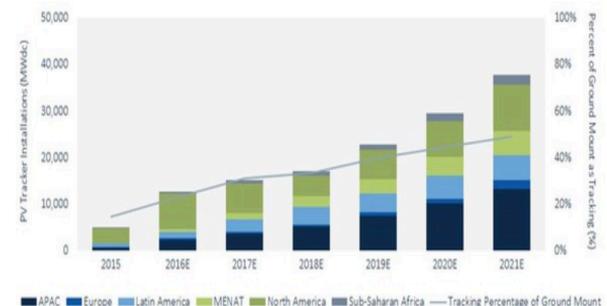
Industry Outlook

The Semiconductor and Solar panel industry is expected to take another turn in the coming years. This industry is still viewed as a growing industry but the boom period is yet to be determined as the industry did not really flourished so far. Yet, the industry is already generating billions of dollars even though most of the major players are not profitable at this point. As mentioned earlier most of the company that composes the industry are rather new and therefore still in aggressive growth mode. There are other factors that make those company so poorly profitable and it is actually not showing wrong business models, more some industry symptoms, but we will get on to that later. The projections for the coming years are rather positive and encouraging. Utility-scale solar generating capacities are set to increase to 27Gw in 2017 from 10Gw in 2014. This represent an annual average growth rate of 39%, which is the highest pace among renewable electricity solutions (Wind power, Geothermal, Hydropower etc.)

U.S. Renewable Energy Supply



On an international level, the portion of semiconductor solar supply in the US is growing at a much faster pace than any other places in the world. Installations are expected to grow from 5Gw in 2015 to 12.6 in 2016 and nearly 40Gw by 2021. The graph below shows the expected growth of PV landscape by 2021.



As you can see North America represent a major part of the scale and 4 companies account for 72% of the total amount of trackers(Plants) in 2015, those companies are Sunpower(SPWR), NEXtracker, Array Tech, and obviously First Solar,Inc.

Business Model

First Solar defines its business model as vertically Integrated. In other word the company acquired plant and other ventures in order to now be able to design, produce, sell and install its thin-film PV technology throughout the US and abroad.

“Our Vertically integrated expertise is maximizing energy and lowering your LCOE” (Levelized Cost of Electricity). The model is said to be based on “More value, less risk”

FIRST SOLAR'S MODEL



First Solar, provide 2 different types of products and one service that could be used separately or when purchasing one of the product.

The first product is called Photovoltaic (PV) “modules”. First Solar defines it as being a leading-edge technologies and offer these products to residential customers and rather small facilities. The product has power output warranty of 25 years and 10-year workmanship and material warranty.

The company also offers PV power plants and project for bigger facilities. In other terms FSLR is selling its designed and manufactured product in an integrated way. Most of the time the company is leasing those power plants and project, so the payout is to be collected in multiple years.

The service that the company offers is “O&M” understand Operating and Maintenance. This basically result in offering maintenance to all PV and solar panel owner even it is not FSLR installations. The company Maintains 55,000,000+ in the U.S. and 5,000+ from 10+ different manufacturer and 40+ different models. The company implemented automated monitoring in their devices to signal any potential failure in the module installed. Basically FSLR intervene each time the device indicates a need for maintenance, and the clients call one of the support centers of First Solar. The company is stating that this monitoring system helps saving an average of \$5k a week due to critical failure. The system is even helping to find critical issues before they occur.

Financials

What’s interesting about First Solar, is that it’s a mature company that operates within an upcoming market, let me explain. The Solar market is similar to the real estate market in terms of financing. Indeed, it takes a lot of capital to supply and install PV plants as the company is not collecting cash before it delivers the product/service. First Solar and its competitors needs to finance almost all their installations beforehand, and receive the payout in decades. Understand that more than 70% of the competitors are currently unprofitable mostly due to the fact that they are in an early stage of their maturities. Now as a mentioned earlier FSLR is a matured company compared to most of the other players in that market (26 years old). The company already stabilized its financials and has been showing profitability for the past 4 years. With that being said

the company still have a lot of room for improvement and potentially more than competitors. The company is still in growth mode and even claims to be the best-in-class and spend more than all the competitors in R&D. In other words, this means that FSLR is maximizing its chances to come with a cutting-edge/break-through innovation, in terms of Solar and PV energy. The industry average for R&D expenditures is around \$42.01M when FSLR re-invested a larger portion with \$130.59M in 2015.

ROC /WACC		
	History	LFY
FSLR	0.54	0.75
Competitors	0.21	0.42

The table shows that the industry forces company to most likely destroy than add value. Here FSLR is considerably destroying less value than competitors. The company has much higher WACC with roughly 12.7% when competitors have around 9.7% but on the other also much higher ROIC with approximatively 7% when industry generate 1.4%.

Valuation

Name (BT Peers)	Sales Growth (%)	Gross Margin (%)	Operating Margin (%)	Pre-Tax Profit Margin (%)	Profit Margin (%)	Return on Assets (%)	Return on Equity	Return on Capital (%)
Average	16.56%	15.63%	-12.31%	-100.87	-16.03%	-1.42%	1.83%	-3.63%
(10) FIRST SOLAR INC	5.54%	29.27%	19.86%	829.44	19.18%	10.69%	14.14%	13.75%
(11) GCL-POLY ENERGY HOLDL...	1.13%	34.01%	26.28%	575.61	15.35%	3.48%	15.99%	7.05%
(12) CANADIAN SOLAR INC	17.12%	16.53%	6.97%	262.81	5.40%	4.36%	22.22%	8.32%
(13) SUNPOWER CORP	-47.92%	11.59%	-20.04%	-375.25	-21.37%	-6.98%	-23.52%	-12.68%
(14) REC SILICON ASA	-33.08%	--	-60.01%	-146.80	-17.39%	-4.08%	-5.52%	-3.92%
(15) SHUNFENG INTERNATIONAL...	22.39%	22.85%	11.95%	-4.40	-0.25%	-0.08%	-0.30%	3.12%
(16) SUNEDISON INC	23.75%	17.65%	-34.04%	-1.22k	-48.44%	-5.83%	-101.03%	-5.20%
(17) LDK SOLAR CO LTD -ADR	13.71%	-37.84%	-96.97%	-1.61k	-274.66%	-40.72%	--	-89.45%
(18) HAREON SOLAR TECHNOL...	22.79%	20.26%	6.38%	9.49	1.56%	0.64%	2.09%	--

(Accounting adjustments: Adjusted for abnormal items, when applicable)

1-yr EPS growth are at 28.78% with and industry average of 4.48% and Sunpower (one major competitor) at -18.11%. The company also beat estimates during 5 consecutive quarters and is set to remain above forecast for upcoming earnings call in late October.

Sales Growth are at 5.54%, below industry average at 16.56% which is a comprehensive patent regarding the maturities of the firms relative to proportion of sales. The Profit Margin is the best metric to express the difference in maturity. The industry average is navigating around the -16% neighborhood while FSLR is currently at 19.18%. GCL-Poly Energy which one the biggest competitors is doing worst on both Sales Growth and Profit Margin as shown on the table above.

P/E at 5.59 could be showing extreme undervaluation knowing that the company and the entire industry are traded at bottom/near all-time lows these days. (Market avg. 19.40)

Name (BI Peers)	Sales Growth Yoy (%)	EBITDA Margin	Mkt Cap	Sales	Net Income	TTM EPS	Operating Profit	R+D Exp	Capex
Average	16.56%	5.17%	1.00B	1.67B	-21.74M	-0.37	29.72M	42.01M	-343.22
001 FIRST SOLAR INC	5.54%	22.11%	4.27B	3.58B	515.35M	7.47	533.48M	130.59M	-166.44
002 GCL-POLY ENERGY HOLDI...	1.13%	35.81%	2.56B	3.46B	385.98M	0.02	715.56M	40.93M	-1.48k
003 CANADIAN SOLAR INC	17.12%	10.70%	906.65M	3.47B	199.04M	3.20	276.98M	17.06M	-642.77
004 SUNPOWER CORP	-47.92%	-2.95%	1.28B	1.58B	-172.83M	-2.44	-184.47M	99.06M	-230.05
004 REC SILICON ASA	-33.08%	42.13%	364.66M	329.90M	48.23M	-0.07	-146.70M	8.10M	-54.70
005 SHUNFENG INTERNATIONAL...	22.39%	26.73%	483.82M	1.12B	10.57M	0.00	146.10M	20.77M	-42.69
006 SUNEDISON INC	23.75%	-1.95%	53.10M	2.48B	-871.59M	-3.13	-405.80M	61.70M	-1.74k
007 LDK SOLAR CO LTD -ADR	13.71%	0.51%	4.52M	680.26M	-266.87M	-6.27	-159.17M	16.77M	-82.27
008 HAREON SOLAR TECHNOL...	22.79%	13.71%	1.70B	964.07M	15.29M	0.00	47.57M	56.34M	263.93

(Accounting adjustments: Adjusted for abnormal items, when applicable)

As shown on the table above FSLR has indeed more R&D, but also less CAPEX than the industry and the best competitors. This demonstrate the difference in model where FSLR is actually leasing a lot of its plant and uses monitoring to avoiding critical failure and additional expenditures. The industry average is at \$343.22 million and FSLR is at \$166.44 million This gives an appropriate level of operating profit as compared to others. If you pay a closer attention to the table above operating profit is lower than GCL results, yet the Net Income is considerably higher for FSLR with \$515.35 against \$385.98 million for GCL and \$199.04 million for Canadian Solar. It is also important to stress that these companies are having the exact same numbers of sales ranging around \$3.5 billion. This shows that FSLR is clearing better a converting sales into cash.

Regarding the EBITDA margin, once again FSLR outperforms the industry with 22.11% against 5.17% on average. This shows that the company is not having financial issues as compared to competitors. The EBITDA for 2015 was above breakeven by approximatively \$780M.

Important Dates and Catalysts

- Elections/Debate – Forecasts and polls.

The Solar panels and renewable energies were cited at least twice over the national debates that took place in the past 2 months. This is actually a context that put the Solar solutions back under the spotlight after 2 rough years. On the day following the first debate no clear moves occurred in the price as the potential winner of the elections could not be determined based on the poor quality of the arguments made. Later on mid-October the stock jumped a stunning 5.9% on

the back of assumptions that candidate Clinton was the most likely winner as she apparently won the final debate vs. candidate Trump. This shows the tremendous importance in the elections that are coming, and I do expect the price to fluctuate quite a bit based on the coming address of both candidates whether official or unofficial (Tweets, press release, interviews etc.)

- IEA (International Energy Agency) report.

The organization annually release their Medium-Term Renewable Energy Market Report, where the agency announces the numbers realized to the continuing period (2016) and also gives a forecast and an estimate on where the market should be same period next year and the next 5 years. The agency is continually upgrading forecast if required from a year to another. This report is supposed to be released on October 25th 2016 in Singapore. Now is it a big deal? Well, specialist and the IEA said the numbers could be “significantly” higher for its outlook on the back of more countries adopting climate change policies.

- Earnings call - (10/27/2016)

Not long after the coming IEA market report, will come the earning release for FSLR. The previous results showed revenues missed estimates short by \$118.13M in Q1 2016. However, the company continuously beats estimates regarding EPS for the four quarters. For the coming Q3 results analyst are confident that the company will at least meet its guidance and potentially exceed estimates.

Summary

This is an unprofitable industry as a whole but FSLR is showing profit thanks to the level of maturity of the firm. Investors have to keep in mind that that market is causing companies to be unprofitable within the first decades of operations. However, FSLR did not reached a top simply based on the fact the company is playing in a growing market that has not boomed yet, when the growth of the sector will occur, First solar, being a best-in-class in many area would probably be the first in line to enjoy the profit realized. This is even truer when one looks at its R&D expense and the will of the firm to come up with a technological breakthrough. I am expecting the company to consolidate its booking therefore future payout at faster pace than its competitors.

First Solar, Inc. (FSLR)

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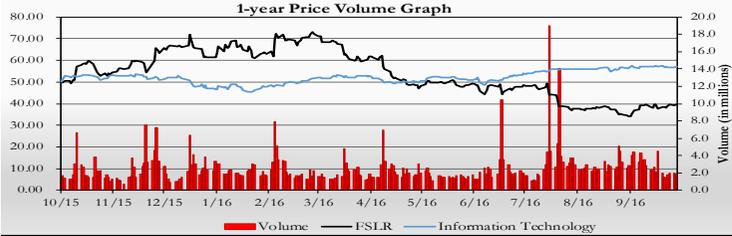
BULLISH

Analysis by
10/21/2016

Current Price: **\$41.78**
Dividend Yield: **0.0%**

Intrinsic Value: **\$45.85**
Target Price: **\$50.72**

Target 1 year Return: **21.39%**
Probability of Price Increase:



Description	
First Solar, Inc. provides solar energy solutions in the United States and internationally.	
General Information	
Sector	Information Technology
Industry	Semiconductors and Semiconductor Equipment
Last Guidance	November 3, 2015
Next earnings date	October 30, 2016
Estimated Country Risk Premium	5.88%
Effective Tax rate	39%
Effective Operating Tax rate	38%

Market Data	
Market Capitalization	\$4,307.29
Daily volume (mil)	0.89
Shares outstanding (mil)	102.36
Diluted shares outstanding (mil)	102.64
% shares held by institutions	74%
% shares held by investments Managers	45%
% shares held by hedge funds	11%
% shares held by insiders	0.69%
Short interest	13.13%
Days to cover short interest	4.15
52 week high	\$74.29
52-week low	\$33.74
Levered Beta	1.92
Volatility	59.98%

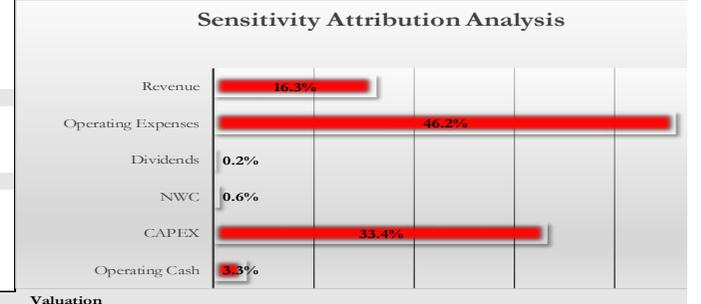
Quarter ending	Revenue	EBITDA
30/2015	10.37%	65.49%
30/2015	3.08%	75.43%
3/31/2015	-5.70%	24.39%
31/2016	-33.42%	4.71%
30/2016	-9.11%	6.66%
Standard error	-6.96%	35.33%
Standard error	7.4%	14.8%

Past Earning Surprises		Peers	
Position	Total compensations growth	SunPower Corporation	
Chief Executive Officer and	-11.2% per annum over 4y	Trina Solar Limited	
Chief Technology Officer	-3.15% per annum over 2y	Canadian Solar Inc.	
Chief Commercial Officer	-28.29% per annum over 3y	JinkoSolar Holding Co., Ltd.	
Chief Financial Officer	N/M	SolarCity Corporation	
Chief Operating Officer	N/M	JA Solar Holdings Co., Ltd.	
Chief Accounting Officer	N/M	Cree, Inc.	
		Yingli Green Energy Holding Co. Ltd.	



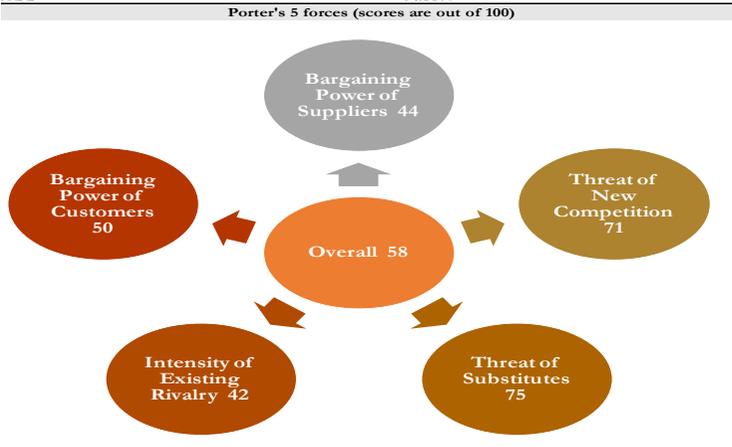
Management	Position	Total compensations growth	Total return to shareholders
Idmar, Mark	Chief Executive Officer and	-11.2% per annum over 4y	3.35% per annum over 4y
Arabedian, Raffi	Chief Technology Officer	-3.15% per annum over 2y	9.9% per annum over 2y
Stout, Georges	Chief Commercial Officer	-28.29% per annum over 3y	24.85% per annum over 3y
Adley, Alexander	Chief Financial Officer	N/M	N/M
de Jong, Tymen	Chief Operating Officer	N/M	N/M
Humaker, Bryan	Chief Accounting Officer	N/M	N/M

Profitability	FSLR (LTM)	FSLR (5 years historical average)	Industry (LTM)
OPAT Margin	14%	11.93%	16.7%
Revenue/Invested Capital	0.66	0.59	0.60
ROE	8.3%	7.25%	11.34%
Adjusted net margin	14%	11.77%	15.4%
Revenue/Adjusted Book Value	0.60	0.62	0.74



Invested Funds	FSLR (LTM)	FSLR (5 years historical average)	Industry (LTM)
Total Cash/Total Capital	22.0%	25.3%	41%
Estimated Operating Cash/Total Capital	12.1%	15.9%	N/A
On-cash working Capital/Total Capital	7.0%	7.9%	8%
Invested Capital/Total Capital	83.4%	85.2%	55%

Capital Structure	FSLR (LTM)	FSLR (5 years historical average)	Industry (LTM)
Total Debt/Common Equity (LTM)	0.09	0.12	0.15
Cost of Existing Debt	8.55%	4.16%	3.14%
Estimated Cost of new Borrowing	4.48%	4.16%	3.14%
S&P Risk Rating	CCC	B	CCC
Levered Beta (LTM)	1.84	1.71	1.23
ACC	14.68%	12.94%	10.78%



Porter's 5 forces (scores are out of 100)	Period	Revenue growth	Valuation	ROIC/WACC
	Base Year	22.5%	14.1%	0.64
	6/30/2017	-19.2%	5.5%	0.24
	6/30/2018	-12.6%	8.8%	0.40
	6/30/2019	30.3%	11.1%	0.71
	6/30/2020	21.1%	11.8%	0.77
	6/30/2021	12.3%	11.7%	0.75
	6/30/2022	7.9%	12.0%	0.75
	6/30/2023	5.0%	12.2%	0.75
	6/30/2024	4.8%	12.6%	0.78
	6/30/2025	4.5%	13.0%	0.81
	6/30/2026	4.3%	13.3%	0.83
	Continuing Period	4.1%	13.7%	0.86

Invested Funds	Period	Invested Capital	Net Claims	Price per share
	Base Year	\$5,133.27	-\$603.90	\$44.82
	6/30/2017	\$5,064.06	-\$1,733.97	\$50.04
	6/30/2018	\$5,130.49	-\$2,501.28	\$54.47
	6/30/2019	\$5,238.73	-\$2,048.20	\$58.98
	6/30/2020	\$6,025.57	-\$1,765.22	\$64.73
	6/30/2021	\$6,317.24	-\$1,796.50	\$71.49
	6/30/2022	\$5,440.46	-\$2,066.50	\$79.08
	6/30/2023	\$4,984.26	-\$2,519.35	\$87.15
	6/30/2024	\$5,952.87	-\$3,021.29	\$95.58
	6/30/2025	\$6,891.58	-\$3,590.82	\$104.45
	6/30/2026	\$7,584.56	-\$4,224.81	\$113.72