

October 2, 2018

First Solar Inc: (FSLR)

Zachary Girvin

Sector: Information Technology

Industry: Semiconductors

Current Price: \$46.74

Target Price: \$48.23

Company Description: First Solar manufactures solar modules. The company uses a thin film, semiconductor to manufacture photovoltaic solar modules. FSLR is an international corporation with operations in Malaysia and Vietnam, as well as a domestic operation based out of Ohio. Their main target market is within the U.S. but they are expanding their existing sales in Western Europe India, Turkey, and Australia.

SELL / WEAK HOLD

Current Price:	\$46.74
Target Price:	\$48.23
Market Cap:	5.16 B
Beta:	0.98
Adj. EBITDA '15	1004.8B
Adj. EBITDA '16	566.1B
Adj. EBITDA '17	377.7B
Adj. EBITDA LTM	349.8 B
ROC	-3.44
ROIC	-2.59



Thesis:

First Solar is reinvesting in themselves at a tremendous rate. However their revenues are down and their return on capital is below the industry average. Their capital expenditures for the past year are pushed up by two expansion products, and this has not only raised their debt levels enough to give them a poor Kd, but it has impacted current operations and destroyed revenue growth. An increase number of bookings have been dropped in recent years which negatively impacts the forward outlook of the company.

Catalysts:

- Short Term): Expected completion of modules in Vietnam to begin commercial shipments in Q4
- Mid Term(1-2 years): Completion of U.S. based G6 manufacturing plant.
- Long Term(3+): Rollout of new modules with increased efficiency should spark revenue growth, but it is uncertain by how much.

Earnings Performance:

First Solar hit a record high revenue level of \$4.11 Billion, in 2015. Compared to their last twelve months revenue of \$2.30 Billion, revenue has dropped 44%. The company has made a lot of moves in their industry trying to outperform competitors, but it hasn't done much so far. Investors have become skeptical of the projected growth of the company with the many unknowns surrounding First Solar. Their earnings have dipped in part do to a focus of constructing new facilities that will produce modules more efficient than their current product. This has impacted their current productions and revenue levels with their product cycle times. First Solar says this is not a long term issue and will be back up to normal soon, but their Adj. EBITDA margins have been steadily declining over the past 3 years.

Revenue, Adj	3,391.2	4,112.7	2,904.6	2,941.3	2,302.8	2,522.9	2,927.6
Growth %, YoY	2.5	21.3	-29.4	1.3	-8.9	-14.2	16.0
Gross Profit, Adj	824.9	1,132.8	638.4	548.9	518.6	526.7	710.7
Margin %	24.3	27.5	22.0	18.7	22.5	20.9	24.3
EBITDA, Adj	672.9	1,004.8	566.1	377.7	349.8	314.6	608.6
Margin %	19.8	24.4	19.5	12.8	15.2	12.5	20.8
Net Income, Adj	373.0	562.3	372.8	319.9	288.2	173.1	336.4
Margin %	11.0	13.7	12.8	10.9	12.5	6.9	11.5
EPS, Adj	3.67	5.52	3.62	3.06	2.72	1.62	3.01
Growth %, YoY	-27.6	50.4	-34.5	-15.4	31.1	-47.2	86.2
Cash from Operations	735.5	-325.2	206.8	1,340.7	1,099.2		
Capital Expenditures	-257.5	-166.4	-229.5	-514.4	-669.5	-845.8	-550.0
Free Cash Flow	478.0	-491.6	-22.7	826.3	429.7	-664.9	60.2

Cost of Capital:

First Solar has taken on more debt in the past year to fuel expansion and growth. They had previously not taken on as much debt as similar competitors in their sector, and looking at the financials, it is clear. They have a cost of debt of 7.82%, which suffocates their possibility of significant growth. They have a calculated WACC of 12.559% which has primarily not been achieved by projects IRR, leading to value destruction. One reason their ROC/WACC has been lower than competitors is due to the larger cost of capital and a lower earning performance.

Although First Solar did have promising financial sin years past, they have hit a roadblock after spending a significant portion on R&D for the Series 5, which they ultimately scrapped before returning anything for those costs.

	ROC /WACC	
	History	LTM
FSLR	0.26	(0.17)
Competitors	0.71	0.07
Target	-0.16	

Another reason of their WACC being higher than competitors is their market size. Sun Power is simply a larger company, as well as Flex Ltd. This allows the companies to have a better credit rating with more assets

and therefor more collateral to put up against loans. SunPower is even owned by a larger company based in France, which they have a healthy relationship with. These factors reduce the likelihood of default and

improve their ability to access more debt at a cheaper cost. These competitors within the solar industry can now fuel growth and require a smaller RRR.

As shown below, First Solar has destroyed value in the past years, in order to fuel a R&D program that may possibly fuel their future growth. While the debt that they have incurred has been to fuel this growth it has impacted the investor's outlook on this company as a more long term investment. The growth of First Solar isn't expected to pick up for another fiscal year which has already impacted earnings and growth with high costs on capital projects.

In Millions of USD	2014 Y	2015 Y	2016 Y	2017 Y	Current/LTM
12 Months Ending	12/31/2014	12/31/2015	12/31/2016	12/31/2017	06/30/2018
 Market Capitalization	4,472.4	6,715.6	3,338.5	7,053.7	4,993.8
 - Cash & Equivalents	1,991.1	1,830.3	1,955.1	2,988.9	3,134.9
 + Preferred & Other	0.0	-333.9	-371.3	-424.8	0.0
 + Total Debt	213.5	289.4	188.4	393.5	456.3
 Enterprise Value	2,694.8	4,840.8	1,200.4	4,033.6	2,315.2

Cash on Hand:

For the past few years, the level of cash that is held by First Solar has increased dramatically as seen in the chart. Due to CAPEX for the current year being approximately

ADJ First Solar Inc		Periods 10		Annuals		Cur USD	
		I/S		B/S		C/F	
		Ratios		Segments		Addl	
		ESG		Custom			
		Standardized		As Reported		Common Size	
		Fair Value Analysis					
In Millions of USD except Per Share		2012 Y	2013 Y	2014 Y	2015 Y	2016 Y	2017 Y*
12 Months Ending		12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017
 Total Assets		6,348.7	6,883.5	6,721.0	7,316.3	6,824.4	6,864.5
Total Assets							
 + Cash, Cash Equivalents & STI		15.8%	25.6%	29.6%	25.0%	28.6%	43.5%
 + Cash & Cash Equivalents		14.2%	19.2%	22.1%	15.4%	19.7%	33.0%
 + ST Investments		1.6%	6.4%	7.6%	9.6%	8.9%	10.5%

\$400 million for a new manufacturing plant this is understandable. However as discussed previously, the company also took on a lot more debt, which is typical for the industry but, they have paid a premium to get this funding. The outflow of cash to fuel this expansion shows that the company is betting on their Series 6 module to gain a large market share and lead the industry. This capital project is not expected to start generating returns for over a year, which calls into question the true value of this stock. Now that the cash has began to leave the company, returns will need to be realized soon in order to keep investors satisfied.

Macro Outlook:

The solar industry is poised for growth and the sector seems to be doing well. An issue that First solar will face is their international production of solar modules. With impending tariffs on solar imports to the United States, First Solar could face severe penalties with plants in both Vietnam and Malaysia. Their prime competitor Sun Power has just bought out a rival's production facility in Oregon based on the threat of this Tariff on solar imports. To make the matter even more risky First Solar just reinvested in their Vietnam facility to build series 6 modules, while continuing their Series 4 at the same level.



On a positive, First Solar's largest capital expenditure will be a brand new facility in Ohio to exclusively produce the Series 6 PV modules. This will benefit the company in the long run with increased efficiency and no threat of a tariff on it's production.

The solar industry is growing and First Solar is investing in this trend. Their issue lies with time to production and ability to capture market share when they are able to provide cost efficient PV systems and modules on a large scale.

ADDING CAPACITY: NEW U.S. SERIES 6 FACTORY

- Announcing new U.S. Series 6 manufacturing
 - Located near existing factory in northwest Ohio
 - Nameplate capacity of 1.2GW
 - First production in late 2019
 - Expected capital expenditures of ~\$400M
 - Creates 500 new high-quality manufacturing jobs
- Increases planned Series 6 capacity to 6.6GW
- Increases planned U.S. Series 6 capacity to 1.8GW



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Conclusion:

The fund should decide whether the reduced short-term growth is worth the risk of this holding. The growth potential in the near term future is dismal, and the firms primary competitors are showing much better returns on capital. The company had increased cash holdings in 2017 to over 40% of revenues, and they still had to raise debt to finance the new Series 6 Factory in Ohio. The first production from this plant is expected at the earliest one year from now, which doesn't seem likely after production issues in Q2 with their Series 6 production in other plants. These have caused yields to drop and unexpected costs to rise in production. Currently operating is a factory in Malaysia and a half scale unit in Ohio.

While the future of the solar industry seems bright, First Solar is quite dull in their financial outlook.

First Solar, Inc. (FSLR)

CENTER FOR GLOBAL FINANCIAL STUDIES

NEUTRAL

Analysis by Zachary Girvin
10/5/2018

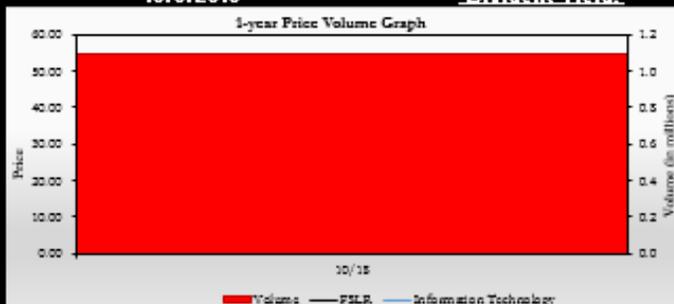
Current Price:
Divident Yield:

\$46.74
0.0%

Intrinsic Value
Target Price:

\$46.74
\$48.23

Target 1 year Return: 3.2%
Probability of Price Increase: 2



Description	
First Solar, Inc. provider photovoltaic solar energy solutions in the United States and internationally.	
General Information	
Sector	Information Technology
Industry	Semiconductors and Semiconductor Equipment
Last Guidance	July 26, 2018
Next earnings date	NM
Market Assumptions	
Estimated Equity Risk Premium	5.37%
Effective Tax rate	27%

Market Data	
Market Capitalization	\$4,993.82
Daily volume (mil)	0.54
Shares outstanding (mil)	104.80
Diluted shares outstanding (mil)	104.55
% shares held by institutions	58%
% shares held by investment Managers	46%
% shares held by hedge funds	5%
% shares held by insiders	28.33%
Short interest	4.90%
Days to cover short interest	3.88
52 week high	\$81.72
52 week low	\$45.27
Volatility	46.96%

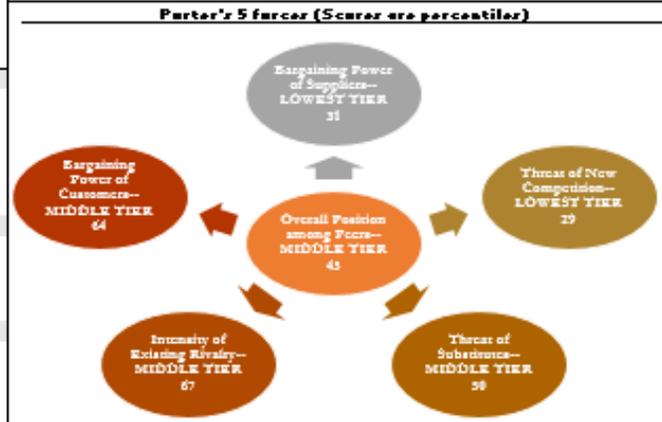
Quarter ending	Part Earning Surprise		EBITDA	Market and Credit Scores	
	Revenue	EBITDA		Recommendation (STARS) Value--3	Recommendation (STARS) Description--Hold
6/30/2017	6.75%	38.38%		Quality Ranking Value--C	Quality Ranking Description--Lowest
9/30/2017	28.69%	48.96%		Short Score--1	Market Signal Probability of Default % (Non-Rating)--0.29%
12/31/2017	-22.50%	8.22%		Market Signal Probability of Default % (Non-Rating)--0.29%	Credit Model Score (Non-Rating)--bb
3/31/2018	34.58%	23.90%			
6/30/2018	-24.14%	-15.80%			
Mean	2.64%	20.73%			
Standard error	1.0%	2.5%			

Industry and Segment Information	
LTM Revenue by Geographic Segm	LTM Revenue by Business Segments
United States--77%	Modules--27%
--	Systems--73%
--	--
--	--
--	--

Management	Position	Total Compensation Grant	Stock Price Growth During Tenure
Widmar, Mark	CEO & Director	5.73% per annum over 5y	11.72% per annum over 5y
Bradley, Alexander	Chief Financial Officer	227.92% per annum over 1y	110.41% per annum over 1y
deJong, Philip	Chief Operating Officer	52.31% per annum over 1y	110.41% per annum over 1y
Garabedian, Raffi	Chief Technology Officer	25.15% per annum over 4y	-1.7% per annum over 4y
Antoun, George	Chief Commercial Officer	-5.77% per annum over 5y	11.72% per annum over 5y
Schumaker, Bryan	Chief Accounting Officer		

Peer	
SunPower Corporation	--
Flex Ltd.	--
Cree, Inc.	--
Canadian Solar Inc.	--
GCL-Poly Energy Holding Limited	--

Profitability	FSLR (LTM)		FSLR Historical		Peer's Median (LTM)	
	Return on Capital (GAAP)	Operating Margin	Revenue/Capital (GAAP)	ROE (GAAP)	Net margin	Revenue/Book Value (GAAP)
Return on Capital (GAAP)	-3.1%	4.42%	4.42%	0.88%	5.55%	
Operating Margin	-6%	12.25%	12.25%	0.36	0.16	
Revenue/Capital (GAAP)	0.53	5.4%	5.4%	7.6%	1.5%	
ROE (GAAP)		7.8%	7.8%	5.02		
Net margin		0.69	0.69			
Revenue/Book Value (GAAP)	\$VALUE!					
Inverted Funds	FSLR (LTM)		FSLR Historical		Peer's Median (LTM)	
	Carh/Capital	NWC/Capital	Operating Asset/Capital	Goodwill/Capital		
Carh/Capital	51.7%	35.6%	35.6%	20.7%		
NWC/Capital	-5.2%	4.8%	4.8%	8.4%		
Operating Asset/Capital	53.3%	56.8%	56.8%	57.6%		
Goodwill/Capital	0.2%	1.3%	1.3%	0.1%		
Capital Structure	FSLR (LTM)		FSLR Historical		Peer's Median (LTM)	
	Total Debt/Market Capitalization	Cost of Debt	CGFS Rating (F=care, Z=care, and default Probability: CCC)	WACC		
Total Debt/Market Capitalization	0.09	0.06	0.06	0.68		
Cost of Debt	4.8%	5.7%	5.7%	5.0%		
CGFS Rating (F=care, Z=care, and default Probability: CCC)						
WACC	12.6%	10.7%	10.7%	6.1%		



Forecast Assumptions	Explicit Period (6 years)		Continuing Period	
	Revenue Growth CAGR	Average Operating Margin	Average Operating Margin	Average Net Margin
Revenue Growth CAGR	1%	15%	3%	15%
Average Operating Margin	2%	2%	6%	2%
Average Net Margin	1%	3%	3%	3%
Growth in Capital CAGR	0%	3%	4%	3%
Growth in Claims CAGR	3%	1%	13%	13%
Average Return on Capital	1%	13%	13%	13%
Average Return on Equity	13%	13%		
Average Cost of Capital	13%			
Average Cost of Equity	13%			

