

Date: 12/16/2017

Maxell Holdings (6810, JP)

Exchange: Tokyo Stock Exchange 1

Sector: Electric Parts

Market Cap: JPY128.2 billion

P/B: 1.1x (3/17 act)

Recommendation: Outperform

Share Price: JPY2,404 (12/15/2017)

Target Price: JPY3,333

P/E: 25.4x (3/18 CE)

Div. Yield: 1.5% (3/18 CE)



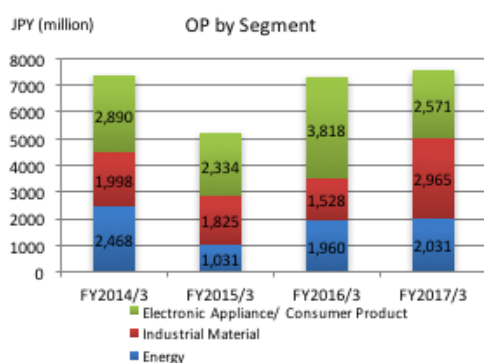
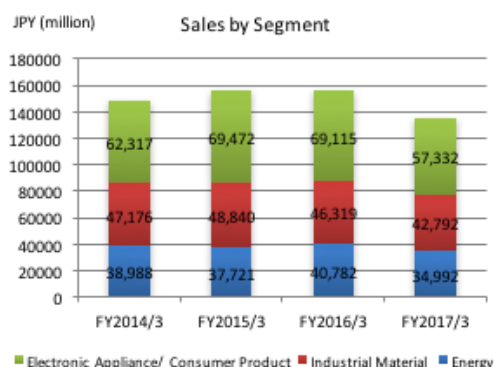
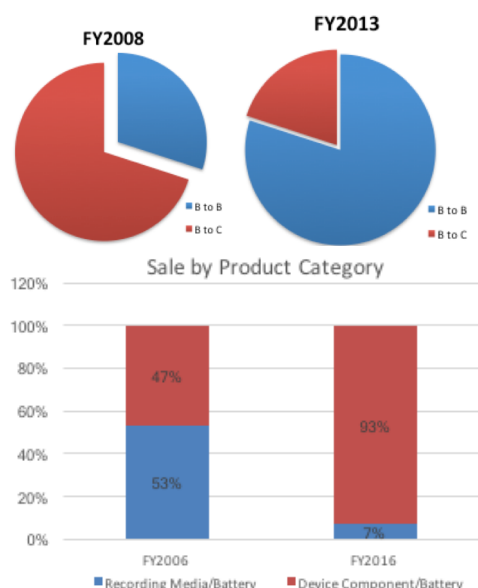
Highlight

METRICAL maintains 'Outperform,' raising target price to JPY3,333 from JPY3,017 of the previous report on September 17th 2017. METRICAL has closely watched its restructure of business portfolios and highlighted its low valuation compared with its business value and net cash as well as non-business assets since initial report on August 31st 2015. The issues of legacy businesses or products that had suffered low profit margins were solved, as magnetic tape closed and its resource has been transferred to coated-type battery separator and consumer-use lithium-ion battery has expanded to game equipment with high profit margin from smartphone that put pressure on price as commodity-type battery. Existing growth automotive products such as TPMS battery, car camera lens and LED head lamp lens perform well on track. New businesses are expected to boost its potential growth further. Maxell consolidated EMS (electronics manufacturing service) business from Renesas Semiconductor Package & Test Solutions Co. Ltd. The EMS of semiconductor production equipment (SPE) is growing at solid rate backed by robust demand by chip makers. Another new business of EF2 (Electro Fine Forming) technology is applied to the deposition mask for organic EL display panel, collaborating with Japan Display Inc. (6740, JP). The Japan's largest panel display maker is trying to get order from a top smartphone company. If this project fulfills in the next year, Maxell's EF2 business will grow to JPY10 billion soon. The valuations are based on the scenario of 50% possibility of receiving the orders in EF2 business from 3Q FY3/2019. DCF valuation is estimated to be JPY3,333, using expected free cash flows from FY3/2018 (E) to FY3/2021 (E). Future NAV that is based on normalized FCF, EBIT or EBITDA from FY3/2014 to FY3/2021 (E) added to its non-business assets is slightly higher JPY3,543. Sum-of-the-Parts NAV that does not include future growth and is based on the business value using normalized FCF, EBIT or EBITDA from FY3/2015 up to ongoing FY3/2018 (E) added non-business assets, shows even 20% higher than the closing price on December 11th 2017. Investment risks remain in projectors and beauty care appliance, but further losses from these products is less likely to expand, as recovery measures would help them improve profitability from the next fiscal year.

Business Description

Maxell was established in 1961 and has expanded its business from battery and magnetic tape of its core products since founded. Maxell has once become a wholly owned subsidiary of Hitachi Ltd. in 2010 and went to public again, relisted in Tokyo Stock Exchange in 2014 after Maxell reorganized its existing business such as battery and recording media and consolidated projector business. The ownership of Hitachi decreased step-by-step from 32% at IPO in March 2014 to 15% in March 2017 and 3% December 2017. Hitachi Maxell acquired business from Renesas (6723, JP) in March 2017 and changed its name to Maxell Holdings in October 1st 2017, aiming at acceleration of future growth under the holding company.

The company has shifted to B2B from B2C business (see pie charts on top of left), focusing on device component from consumer products such as recording media/battery and has further restructured business portfolios for improving its profitability, reducing commodity business such as smartphone-use lithium ion battery, camera lenses, magnetic tapes, and commodity type of electronic accessories to more profitable products such as TPMS battery, car camera and LED lamp lenses (see table 'Sale by Product Category' on left). The restructure raised OP margin from 3.3% for FY3/2015 to 5.6% for FY3/2017 although projector has turned down due to interruption of supply chain hit by Kumamoto Earthquake in April 2016. The current business is divided to 3 segments of Energy, Industrial Material and Electronic Appliance/Consumer Product. Sales and OP by business segment are shown chart 'Sales by Segment' and 'OP by Segment' on the left.



Energy

Energy segment consists mainly of lithium-ion rechargeable batteries, of which consumer use lithium-ion battery has shipped to a large smart phone maker, but the business could hardly to make enough profit margin due to volatile order volume and intense price competition, while Maxell reduced its fixed costs and the shipment to the smartphone maker. However, the game has changed, as a large game maker determined to adopt the lithium-ion rechargeable battery from dry battery for its remote controller of game equipment for the first time in the world and the expansion of the use of the battery pushes the profitability up significantly. Of micro-batteries, heat-resistant coin-type lithium manganese dioxide batteries are a growth driver used for tire pressure monitoring systems (TPMS). In FY03/2018 the demand of lithium-ion battery that have been used for smartphone emerged for video game equipment (controller) replaced from dry battery. Sale and OP of this segment accounts 26% and 27% for FY03/2017.

Industrial Material

Industrial Material consists of 2 automotive growth products that support automotive technology as high-precision lens units for car camera and LED car headlamp lenses. Other products include Adhesive tape used for packing, protection, and building, and is also combined with new functions for use in the semiconductor manufacturing process and in electronics. Magnetic tape was Maxell's flagship product in the past, but the production has ceased and the resource has been transferred to a joint company with Ube Kosan (4208, JP) that develops battery separator for electric vehicle (EV). In addition to the business, this segment includes EMS business and EF2 business as mentioned earlier. Sale and OP of this segment accounts 32% and 39% for FY03/2017.

Electronic Appliance/Consumer Product

Electronic Appliance and Consumer Product sells small electrical equipment, accessories and recording media and dry batteries for consumer market. Maxell has been trying to pull up the profitability, replacing the product portfolios. Projectors focus high-end products, targeting educational institution and moisturizing support device is the most popular item for foreign tourists. Projectors and Beauty care appliances have led the earnings of the segment, but the both suffer competition by rivals after the solid growth a few years ago. Sale and OP of this segment accounts 42% and 34% for FY03/2017.

Industry Overview and Competitive Positioning

Industry Overview

Maxell is shifting from B to C to B to B and strengthening its business portfolios, as each segment has been comprised of mixed portfolio of growth and legacy products. Automotive related growth products such as TPMS battery, car camera lens and LED car headlamp lens offset the loss of smartphone-use lithium-ion battery and magnetic tape for years, but those legacy products have significantly reduced or closed the business.

Heat-resistant coin-type lithium micro battery is expanding on global demand, as an increasing number of countries legislate a law for equipping TPMS (Tire Pressure Monitoring System) in a car. Legislation of TPMS is scheduled in China for 2018 after US in 2007, EU in 2012, South Korea in 2014, Taiwan in 2015 and Russia in 2016. TPMS battery market grew across the globe in line with the increase of the countries of legislation from 119 million units for 2014 to 162 million units for 2017 and is expected to grow 11% per annum to 219 million units for 2020.

Car camera lenses benefit from ADAS (Advanced Driving Assistant System) that will replace from car view camera to car 'sensing' camera. For instance, more than 10 lenses are used for sensing

camera in high-end car models. Car camera (view camera + sensing camera) is expected to increase from 16% per annum from 65 million units for 2014 to 160 million units for 2020. LED car headlamp lenses are also growing on increasing demand of low electricity consumption lights in addition to 'Daytime Running Light' legislated in Europe and U.S. The number of cars equipped LED car headlamp lenses are expected to grow 5% for 2014 to more than 20% for 2020 in worldwide. Projectors grew, focusing on high-end market for mainly education institutions. Beauty Care appliances enjoyed upbeat sale buoyed by sale to foreign visitors as well as increasing demand of health and beauty conscious of consumers. However, these 2 products turned down from FY03/2017. Projector suffered by Kumamoto earthquake in April 2017 as its supplier suspended its shipment of electric parts for projector. Soft sale by foreign tourists led slower sale of beauty care appliance.

Conversely, Lithium-Ion Battery for smartphone has grown slower in line with soft growth of smartphone devices. Magnetic Tape has declined due to substitution by newer technology and the business has been closed substantially. Consumer Appliances such as audio accessory and dry battery have deteriorated profitability due to commodity products. The sale of legacy products is decreasing on track as the company projection.

Competitive Positioning

Competitive Positioning is analyzed major products in 5 Forces.

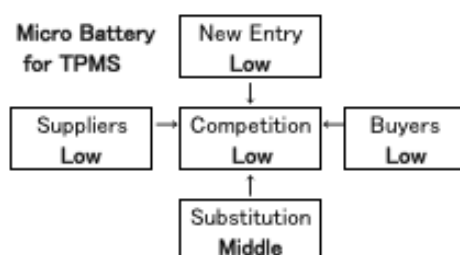
Micro Battery for TPMS

Buyers (Low risk): Maxell as a top manufacturer has close relationship with global 5 major TPMS makers through joint development, having normally long-term contract for its product shipment. Going forward increasing number of countries are likely to require TPMS in automobiles by law. China will schedule to legislate it in 2019.

Suppliers (Low risk): Maxell as a top manufacturer has close relationship with suppliers globally for its plant in Ono, Japan. Commodity prices are currently relatively stable.

Competition (Low risk): Due to limited number of heat-resistant coin-type lithium micro battery and market expansion, competition is moderate. Competitors are Panasonic and Sony.

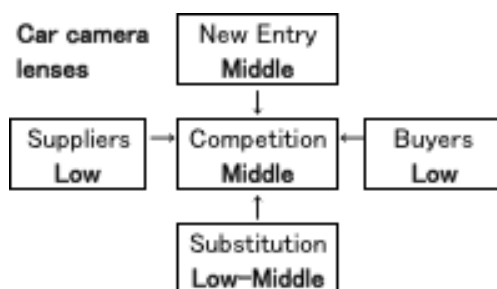
New Entry (Low risk): Mainly due to technology barrier that requires stable quality under -40 degrees Celsius to +125 degrees C, new entrance is limited.



Substitution (Middle risk): Maxell keeps developing technology, providing battery for direct attached on tire type TPMS module that enables it to linkage with ABS system. TPMS is likely to advance in line with safe driving technology, although 'indirect' type TPMS would be a threat for 'direct' type makers such as Maxell. But direct type TPMS will be applied to sensing of road surface in future.

Car camera lenses

Buyers (Low risk): Maxell as one of WW 3 manufacturer has close relationship with car camera makers on reliable high quality of products. Sensing camera requires far higher quality in wide range, resolution, heat resistance and water repellency.



Suppliers (Low risk): Maxell as a top manufacturer has close relationship with suppliers globally for its plant in Japan and Malaysia. Relatively stable commodity prices are benefit to the company.

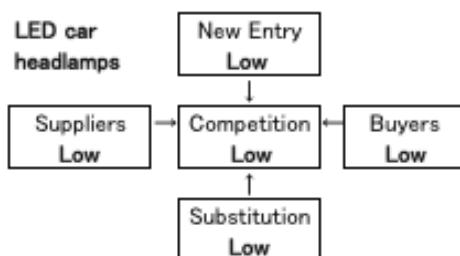
Competition (Middle risk): Due to its high technology, competition would be limited. Plastic lenses are lower cost, but while sensing camera lenses are expanding, they require increasingly higher specification of aspheric hybrid lenses made of glass and plastic. However, the number of manufacturers is relatively large.

New Entry (Middle risk): Due to its high technology mentioned above, threat of new entry would be limited in particularly high-end camera lenses.

Substitution (Low-Middle risk): Due to cost of production, substitution risk by plastic lenses is likely in future. However, demand of high-specified lenses for sensing camera, glass/plastic hybrid lenses would be advantageous for the time being.

LED car headlamp lenses

Buyers (Low risk): Maxell as a top manufacturer has close relationship with car LED light makers such as Koito on reliable high quality of products.



Suppliers (Low risk): Maxell as a top manufacturer has close relationship with suppliers globally for its plants in Japan, China and Malaysia. Relatively stable commodity prices are benefit to the company.

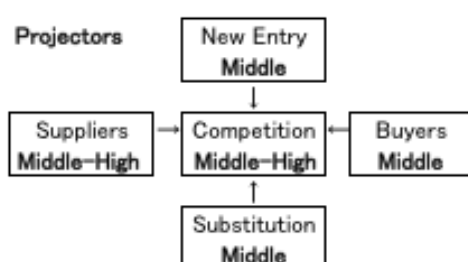
Competition (Low risk): Due to limited number of LED makers, competition would be limited. Maxell has high advantages of establishing production line from metal mold to fine processing to finished products.

New Entry (Low risk): Due to its high technology and established production system, threat of new entry would be marginal.

Substitution (Low risk): As the leading company of LED headlamp lenses, its technology is highly advanced, as LED headlamp lenses are leading in Japan to any other region in the world. LED headlamp lenses equipped in Japanese cars are approximately 40% compared with 10% in worldwide as of 2016. Due to its technology and cost of production, substitution risk is low.

Projectors

Buyers (Middle risk): Maxell uses niche market strategy, focusing on high-end projectors for schools and large size theater or convention centers, and selling globally, in particular China and Asia of increasing demand market. However, due to soft economy in China the sale has hit the peak in FY03/2016.



Suppliers (Middle-High risk): Maxell has close relationship with suppliers globally. However, Kumamoto quake in April 2016 suspended shipment of image sensor to projectors makers, as only supplier Sony provides sensor. Projectors was forced slower shipment for 1H of FY03/2017.

Competition (Middle-High risk): Seiko Epson is a strong competitor, covering all categories of projectors, whereas Maxell focuses on high-end market. High-end market is expanding but volume market is decreasing. This was a tailwind for the company and enjoyed expanding sale to educational customers as Maxell had segregated its market and focused on high-end large projectors. But while the company suffered problem on supply chain hit by earthquake in 1H FY03/2017, the market environment has changed. Competitors entered into high-end market and developed a new model equipped with new light source such as LED or laser instead of lamp. The competition is likely to remain intense for next few years.

New Entry (Middle risk): Due to its high specification, such as high brightness, threat of new entry into high-end market would be relatively lower than volume market. However high technology of Maxell, competitors are likely to enter high-end market from soft growth of volume market. Competitors are getting into the high-end market recently.

Substitution (Middle risk): Currently there would be some risk of substitution of projector, as newly advanced technology improves its function such as projection mapping. Lately, projector equipped with LED light source is getting popular and shifting to high-end market, too. Maxell is behind of competitors in launching such product. Also,

Maxell should accelerate such advanced technology to next generation projector and apply to other area such as Head up display.

Beauty Care Appliance

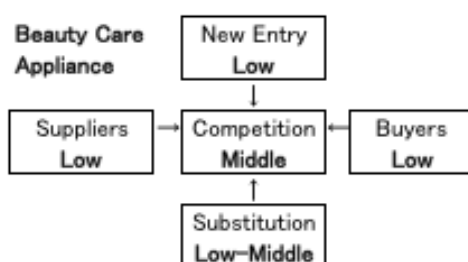
Buyers (Low risk): Maxell as one of the largest makers in Japan providing the consumer products to develop customer need backed by higher consciousness of beauty and health care.

Suppliers (Low risk): Maxell as a top manufacturer has close relationship with suppliers in Japan. Relatively stable commodity prices are benefit to the company.

Competition (Middle risk): Reliable brand of 'Hitachi' is advantage for the company. Another top brand of 'Panasonic' is also strong. Due to developing value added on high specification, the company's moisturizing support device has been supported by consumers. However, the competition is increasing, as rivals develop and enter high specification products into marketplace. Maxell is trying to diversify its products.

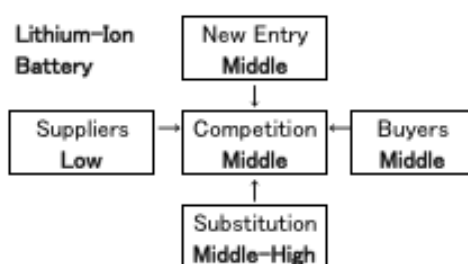
New Entry (Low risk): Due to nature of luxury goods that are used by touching his/her own body directly, reliable brand is highly advantageous in Japan, but imitation goods (low quality) would often sell in China and damage the high reputation of the company.

Substitution (Low-Middle risk): Due to nature of consumer goods, substitution risk by innovation is less likely slower than industrial goods. It would take some time to spread reputation of a technology for beauty care among consumers.



Lithium-Ion Battery

Buyers (Middle risk): Its major customer was one of the largest smartphone makers and the order comes average 2 months in advance of shipment based on weekly forecast. The large change in quantity of order in particularly for new-models was a big risk for the company. Maxell has implemented its fixed cost reduction for 3Q of FY03/2015 and intentionally reduced its dependence on smartphone use battery to JPY2 billion from JPY10 billion in sale of the peak. Now, the sale to video game has been growing significantly since a Kyoto based game maker determined to equip lithium-ion battery in its video game equipment. Until now, rechargeable battery was not equipped in the remote controller of game equipment due to safety, while game players prefer rechargeable battery to non-rechargeable dry battery. However, a game maker giant decided to use lithium-ion battery for its new model for the first time now, as Maxell battery is reliable in its high quality. The sale is sharply expanding in line with strong growth of the game equipment. Due to the quality, the game maker is unlikely to switch the supplier.



Suppliers (Low risk): Maxell as a large manufacturer has close relationship with suppliers globally for its plant in Kyoto and China. However, the rise in commodity prices comes pressure on the COGS going forward.

Competition (Middle risk): Maxell mainly ship the Korean company mainly square-type battery that is used for volume-zone. Hence, the company's products are more likely to come under downward pressure on prices than smartphones rather than laminated type battery for high-end devices. In case of appreciation of JPY rates, its profitability is deteriorating.

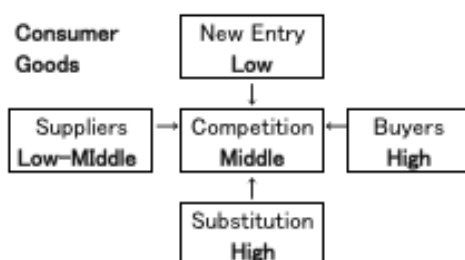
New Entry (Middle risk): Due to its commodity type of products mentioned above, threat of new entry is likely.

Substitution (Middle-High risk): In line with technology development and shifting to high-specified devices, laminated battery is replaced from square-type battery.

Consumer Goods

Buyers (High risk): Due to commodity nature of products, the prices come under downward pressure.

Suppliers (Mid-High risk): Maxell is selling the consumer goods as EMS. Due to long-term relationship with suppliers, the risk is likely to remain low.



Competition (High risk): Maxell continues focusing on high-end products replacing from low margin products. But optical disk benefits from decline market as a survivor.

New Entry (High risk): Due to its commodity type of products mentioned above, threat of new entry is very likely.

Substitution (High risk): The products are matured and declining volume. In line with technology development, production cost of newer products is getting lower on the increase of volume.

Business Outlook

2Q FY3/2018 Result

Sale rose 10.6% YoY to JPY73,000 million, and OP, RP and NP soared 57.1% YoY to JPY4,579 million, 91.3% YoY to JPY4,506 million and 142.1% YoY to JPY4,103 million. Lithium-ion for video game equipment and newly consolidated Maxell System Tech contributed in its profit, while TPMS, car camera lenses and car LED headlamp lenses grew on track. Projector and beauty care appliance remained slower.

Full Year FY03/2018 Outlook by Company

Maxell kept its guidance for full year FY3/2018 on hold at this moment. Sale is expected to increase 3.6% YoY to JPY140,000 million, OP up 5.7% YoY to JPY8,000 million and NP down 12.6% YoY to JPY5,000 respectively. Dividend will remain flat at JPY18 a share for semiannually (annually JPY36 a share).

Full Year FY03/2018 by METRICAL

METRICAL maintains its solid earnings for the ongoing full year forecast due to higher-than-expected growth in video game use lithium-ion battery for 1H and positive growth in EF2 and Maxell System Tech. Sale is expected to be up 12.4% YoY to JPY151,827 million, OP increase 15.4% YoY to JPY8,731 million and RP up 17.2% YoY to JPY8,659 million and NP up 22.2% YoY to JPY6,995 respectively (see tables financial statements in Appendix). Further losses are not expected in projector business, as the company is reducing its inventory, preparing for strengthening the new models equipped with new-type of light source such as LED and laser for the next year.

Mid-term Projection FY3/2021 by METRICAL

METRICAL expects growth products to maintain solid growth for FY3/2021, as TPMS battery, Car sensing camera and LED car headlamp lenses are expected to keep strong demand and lithium-ion battery for game equipment continue positive growth for the mid-term. For FY3/2021 sale is expected to grow to JPY187,467 million, and OP, RP and NP are expected to grow to JPY13,011 million, JPY13,012 million and JPY9,063 million in the scenario that includes the 50% possibility EF2 business receive the order from JDI successfully in 3Q FY3/2019.

EF2 (Electro Fine Forming)

EF2 technology is originated from electric shaver and applied to wafer bumping and is developing the technology for using the deposition mask for organic EL display panel. This technology enables the mask to make 8 micro mm in thin and hence to realize further high-definition for organic EL panel that demands real 400 ppi right now. This project is collaborated with Japan Display Inc. (6740, JP)

and a manufacture of Vertical deposition machine. Maxell produces highbred mask for organic EL panel and continues developing further high definition of real RGB 800 ppi. The maker such as JDI can reduce a production process, as Maxell provides Frame-integrated masks. EF2 business was JPY2 billion for 3/2017 and Maxell aims to grow to JPY10 billion soon after JDI receives order to produce the panel for iPhone. It will be determined in 2Q FY3/2019. The OP margin for FY3/2017 was approximately 5% and is expected to accelerate in case of successful contract.

Maxell System Tech

Maxell System Tech was newly consolidated on May 1st 2017 and consisted of 2 business such as EMS and image recognition equipment. Currently EMS business leads the earnings of the subsidiary, growing the sale from JPY5 billion for FY2016 prior to the consolidation to more than JPY3 billion for only 5 months from May to September 2017. The EMS business undertakes from a large SPE maker on a long-term contract. The strength includes its high-mix low-volume production and this is different from EMS providers in China and Taiwan. The business is growing and makes enough OP margin of approximately 10% after amortization. Image recognition business is expected to have synergy with technology of projector and car camera lens, and developed Head up display (HUD) and sensing camera lens unit for ADAS.

Valuation

METRICAL issued Buy recommendation in September 2015. The background of undervalued price would be due to some difficulty to find a true picture of the company by only a glance at the income statement, as total sale has stayed around JPY140 billion since relisted in 2014 and OP margin has pulled lower by losing money of legacy business. However, the game was changed and the future growth prospect has turned much clearer through the reform of business portfolios for years. OP margin recovered incrementally and drastic solution would be finally implemented on Magnetic Tape for FY3/2017. Somehow issue on all 3-legacy products have been implemented and the losses would no longer affect its overall earnings significantly and existing automotive growth products will accelerate the earnings going forward. Also, favorable demand of lithium-ion battery for video game equipment is very likely to maintain positive profit growth, absorbing some negative effect of the increase of material cost. Favorable EMS business in Maxell System Tech continue adding profits led by robust demand of semiconductor market. In addition, the EF2 business would push the earnings further higher if the project with JDI is successful. Considering these factors, there would be more room of rising the share price in the mid-term view. DCF, Sum-Of-The-Parts NAVs and EV/EBITDA shows the share price is traded at undervalued.

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DCF - Hitachi Maxell (6810 JP)		<i>JPY million</i>
PV of SUM of FCF		22,223
PV of Terminal Value		80,337
Enterprise Value		102,561
Non Business Assets		73,988
Debt		422
Equity Value		176,126
Equity Value/Share		3,333

WACC - Hitachi Maxell (6810 JP)	
Deabt	422
Equity Market Value	128,233
Risk free Rate	0.6%
Equity Risk Premium	5.0%
Beta	1.14
Cost of Debt	3.2%
Cost of Equity	6.3%
WACC	6.3%

DCF

DCF valuation uses expected free cash flows from FY3/2018 (E) to FY3/2021 (E) that is expected on the scenario that 50% possibility of successful project in EF2 business. The DCF value was estimated based on the PV of expected FCFs for the next 4 years and the terminal value divided WACC of 6.3% (see tables on left). On this assumption, the valuation of DCF is estimated to be JPY3,333 a share.

Sum-of-the Parts NAV

Sum-of-the-Parts (SOTP) NAV is business value of each business segment that is normalized EBIT, EBITDA and FCF from FY3/2014 to FY3/2018(E) by multiples, added to net cash and long-term investment securities and land (75% of the book). SOTP value for FY3/2018(E) is appraised to be JPY2,995 (20% discount of closing price of December 15th 2017). Future NAV for FY3/2021 (E) is estimated to be JPY3,543 (32% discount of closing price of December 15th 2017), as shown table below.

NAV's:			NAV's:		
Sum of the parts NAV FY3/2018 (E):			Future NAV FY3/2021 (E):		
Energy	495	5x EBITDA	Energy	703	5x EBITDA
Industrial Material	546	15x FCF	Industrial Material	655	15x FCF
Electronic Appliance/	566	15x FCF	Electronic Appliance/ Cc	557	15x FCF
Cash	979	1x Book	Cash	1,196	1x Book
Investment Securities	99	0.75x Book	Investment Securities	99	0.75x Book
Land	472	0.75x Book	Land	472	0.75x Book
Debt	(131)	1x Book	Debt	(131)	1x Book
Minority Interstet	(32)	1x Book	Minority Interstet	(8)	1x Book
Total SOTP NAV	JPY 2,995	80.3%	Total Future NAV	JPY 3,543	67.9%

EV/EBITDA

EV/EBITDA for FY3/2018(E) is estimated to be 6.6x and will decline to 4.3x for FY3/2021 (E). Adjusted EV/EBITDA that includes long-term investment and land will go down to 3.4x for FY3/2018 (E) and 1.9x for FY3/2021 (E) (please see table 'EV/EBITDA' in Appendix). The multiple remains still low and the revaluation is very likely.

Financial Analysis

As shown table 'Key Financial Ratios' in Appendix, Maxell has strong balance sheet, as net cash and net working capital are positive backed by relatively stable free cash flow over years, and improves profitability year by year, although profitability is not high enough. Lower ROE is caused by lower financial leverage and in particular lower profit margin, but gradual increase in OP margin will improve ROE at solid pace step by step. Operating cash flow has been improving for the past few years and positive outlook of its business portfolio will accelerate its free cash flow and financial solidness further (see financial statement in Appendix). Due to building the cash on hand, raising cash dividend is very likely.

Investment Risks

Global economic downturn (Likely, Middle Risk)

In case of global recession, the business will be soft as the earnings slowed for 2H FY3/2016 due to decline in business confidence led by China's economy. Projectors suffered from the slowdown temporarily at that time, but in mid-term view 3 growth products are expected to continue expanding in automotive area, as ADAS and safety driving technology will be accelerating.

Softened market of smartphone (Likely, Low Risk)

Lithium-ion battery for smartphone is decelerating. Currently the earnings are under break-even but the sale to the smartphone maker has been decreasing. The negative impact is limited now. Maxell has tried to decrease dependence on smartphone and diversify to other usage such as video-games. The sale to video game use pushes the earnings significantly from 4Q FY3/2017.

Strong JPY rate (Likely, Low-Middle Risk)

Currency risk is mostly on export to Lithium-ion battery for smartphone. But the sale is getting smaller by 10%-20% per annum and the impact will be smaller year-by-year. The negative impact seems to be limited.

Hitachi Brand (likely, Low-Middle Risk)

Hitachi Ltd. reduced its ownership to 3% in December 2017. However, Maxell will maintain co-working of basic research on future technologies with Maxell. On the other hand, Maxell provides beauty care appliance and projectors and etc. to Hitachi as a 'Hitachi' brand. From separation from Hitachi, Maxell should provide its quality of products as one of manufacturers, although the company benefits to other providers due to long-term relationship in Hitachi group. Also, Maxell should enhance its own 'Maxell' brand, as the company plans to develop the brand in beauty care appliance that is under restructuring.

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Appendix

FY2017/3 (E)	Sales	COGS	COGS/S	Gross Profit	SGA	SGA/S	OP	OPM	RP	EBT	Tax	Minority	Net Profit		
1Q (act)	32,698	-25,866	-79.1%	6,832	-5,719	-17.5%	1,113	3.4%	689	496	-104	-14	378		
2Q (act)	33,297	-25,983	-78.0%	7,314	-5,512	-16.6%	1,802	5.4%	1,667	1,659	-324	-18	1,317		
3Q (act)	35,059	-27,031	-77.1%	8,028	-5,664	-16.2%	2,364	6.7%	2,811	2,132	-547	-71	1,514		
4Q (act)	34,062	-25,991	-76.3%	8,071	-5,783	-17.0%	2,288	6.7%	2,220	2,416	108	-9	2,515		
Full Year	135,116	-104,871	-77.6%	30,245	-22,678	-16.8%	7,567	5.6%	7,387	6,703	-867	-112	5,724	108.3	22.2
Full Year (CE)	140,000						6,000	4.3%	5,600				3,900	73.8	32.6
FY2018/3 (E)	Sales	COGS	COGS/S	Gross Profit	SGA	SGA/S	OP	OPM	RP	EBT	Tax	Minority	Net Profit		
1Q (act)	33,543	-25,558	-76.2%	7,985	-5,901	-17.6%	2,084	6.2%	2,053	1,934	-489	-3	1,442		
1Q (act)	39,457	-30,777	-78.0%	8,680	-6,185	-15.7%	2,495	6.3%	2,453	3,251	-574	-16	2,661		
3Q (E)	39,765	-31,176	-78.4%	8,589	-6,424	-16.2%	2,165	5.4%	2,165	2,165	-568	-89	1,508		
4Q (E)	39,063	-30,443	-77.9%	8,620	-6,632	-17.0%	1,988	5.1%	1,988	1,988	-522	-82	1,385		
Full Year (E)	151,827	-117,954	-77.7%	33,873	-25,142	-16.6%	8,731	5.8%	8,659	9,338	-2,153	-189	6,995	132.4	18.2
Full Year (CE)	140,000						8,000	5.7%					5,000		
FY2019/3 (E)	Sales	COGS	COGS/S	Gross Profit	SGA	SGA/S	OP	OPM	RP	EBT	Tax	Minority	Net Profit		
1Q (E)	36,466	-27,799	-76.2%	8,667	-6,415	-17.6%	2,251	6.2%	2,252	2,252	-591	-92	1,568		
2Q (E)	42,177	-32,730	-77.6%	9,446	-6,611	-15.7%	2,835	6.7%	2,835	2,836	-744	-116	1,975		
3Q (E)	42,593	-33,013	-77.5%	9,581	-6,881	-16.2%	2,699	6.3%	2,700	2,700	-709	-111	1,880		
4Q (E)	41,961	-32,167	-76.7%	9,794	-7,124	-17.0%	2,670	6.4%	2,670	2,670	-701	-110	1,860		
Full Year (E)	163,197	-125,710	-77.0%	37,487	-27,032	-16.6%	10,455	6.4%	10,456	10,457	-2,745	-429	7,283	137.8	17.4
Full Year (CE)															
FY2020/3 (E)	Sales	COGS	COGS/S	Gross Profit	SGA	SGA/S	OP	OPM	RP	EBT	Tax	Minority	Net Profit		
1Q (E)	38,436	-29,266	-76.1%	9,170	-6,762	-17.6%	2,408	6.3%	2,408	2,408	-632	-99	1,677		
2Q (E)	45,189	-34,874	-77.2%	10,315	-7,084	-15.7%	3,232	7.2%	3,232	3,232	-849	-133	2,251		
3Q (E)	45,593	-35,134	-77.1%	10,459	-7,366	-16.2%	3,093	6.8%	3,094	3,094	-812	-127	2,155		
4Q (E)	44,949	-34,371	-76.5%	10,578	-7,631	-17.0%	2,947	6.6%	2,947	2,947	-774	-121	2,053		
Full Year (E)	174,167	-133,644	-76.7%	40,522	-28,842	-16.6%	11,680	6.7%	11,681	11,682	-3,067	-480	8,136	154.0	15.6
Full Year (CE)															
FY2021/3 (E)	Sales	COGS	COGS/S	Gross Profit	SGA	SGA/S	OP	OPM	RP	EBT	Tax	Minority	Net Profit		
1Q (E)	41,230	-31,295	-75.9%	9,935	-7,253	-17.6%	2,681	6.5%	2,682	2,682	-704	-110	1,868		
2Q (E)	48,734	-37,498	-76.9%	11,236	-7,639	-15.7%	3,597	7.4%	3,597	3,597	-944	-148	2,505		
3Q (E)	49,089	-37,713	-76.8%	11,376	-7,931	-16.2%	3,446	7.0%	3,446	3,446	-905	-141	2,400		
4Q (E)	48,413	-36,906	-76.2%	11,508	-8,220	-17.0%	3,288	6.8%	3,288	3,289	-863	-135	2,290		
Full Year (E)	187,467	-143,412	-76.5%	44,054	-31,043	-16.6%	13,011	6.9%	13,012	13,013	-3,416	-534	9,063	171.5	14.0
Full Year (CE)															

(Source) Hitachi Maxell, METRICAL

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FY2017/3								
1Q (act)	8,381	193	10,649	635	13,668	285	32,698	1,113
2Q (act)	8,997	441	10,409	787	13,891	574	33,297	1,802
3Q (act)	8,781	468	10,746	953	15,532	943	35,059	2,364
4Q (act)	8,833	929	10,988	590	14,241	769	34,062	2,288
Full Year	34,992	2,031	42,792	2,965	57,332	2,571	135,116	7,567
Full Year (CE)	34,500	1,300	41,000	1,900	64,500	2,800	140,000	6,000
FY2018/3 (E)								
1Q (act)	9,113	1,056	11,704	821	12,726	207	33,543	2,084
2Q (act)	12,989	1,715	12,845	706	13,623	74	39,457	2,495
3Q (E)	9,947	1,201	13,267	770	16,551	193	39,765	2,165
4Q (E)	10,030	1,114	13,618	779	15,415	94	39,063	1,988
Full Year (E)	42,079	5,086	51,433	3,077	58,315	568	151,827	8,731
Full Year (CE)	31,400	2,200	47,800	3,100	60,800	2,700	140,000	8,000
FY2019/3 (E)								
1Q (E)	10,306	1,166	12,437	712	13,723	374	36,466	2,251
2Q (E)	14,725	1,501	12,654	841	14,798	493	42,177	2,835
3Q (E)	11,249	1,166	13,518	905	17,826	629	42,593	2,699
4Q (E)	11,322	1,168	13,880	902	16,759	600	41,961	2,670
Full Year (E)	47,602	5,001	52,489	3,359	63,106	2,096	163,197	10,455
Full Year (CE)								
FY2020/3 (E)								
1Q (E)	11,438	1,155	12,691	679	14,306	574	38,436	2,408
2Q (E)	16,267	1,574	13,523	1,020	15,399	638	45,189	3,232
3Q (E)	12,470	1,252	14,593	1,063	18,530	779	45,593	3,093
4Q (E)	12,534	1,193	14,963	1,049	17,452	705	44,949	2,947
Full Year (E)	52,709	5,173	55,770	3,811	65,687	2,696	174,167	11,680
Full Year (CE)								
FY2021/3 (E)								
1Q (E)	12,716	1,301	13,667	783	14,847	597	41,230	2,681
2Q (E)	17,995	1,763	14,654	1,163	16,085	671	48,734	3,597
3Q (E)	13,846	1,409	15,904	1,217	19,339	820	49,089	3,446
4Q (E)	13,901	1,345	16,279	1,201	18,234	742	48,413	3,288
Full Year (E)	58,458	5,818	60,504	4,365	68,504	2,829	187,467	13,011
Full Year (CE)								

(Source) Hitachi Maxell, METRICAL

EV/EBITDA	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18(E)	Mar-19(E)	Mar-20(E)	Mar-21(E)
Avg. Mkt. Cap	JPY 114,811	JPY 99,818	JPY 96,779	JPY 127,031	JPY 127,031	JPY 127,031	JPY 127,031	JPY 127,031
EV	JPY 107,094	JPY 69,202	JPY 63,330	JPY 83,820	JPY 83,511	JPY 80,446	JPY 76,460	JPY 71,943
EV/EBITDA	8.91	6.74	5.28	7.05	6.61	5.60	4.91	4.25
*EV (+LT Investn	JPY 61,885	JPY 32,770	JPY 25,102	JPY 43,196	JPY 42,887	JPY 39,822	JPY 35,836	JPY 31,319
*EV/EBITDA	5.15	3.19	2.09	3.63	3.40	2.77	2.30	1.85

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Key Financial Ratios:	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18(E)	Mar-19(E)	Mar-20(E)	Mar-21(E)
ROE		6.30%	5.90%	3.38%	4.88%	5.75%	5.83%	6.27%	6.70%
Gross Margin	20.16%	22.10%	20.33%	21.25%	22.38%	22.31%	22.97%	23.27%	23.50%
EBITDA Margin	3.82%	8.09%	6.58%	7.67%	8.80%	8.32%	8.80%	8.95%	9.02%
EBIT Margin	1.65%	4.95%	3.33%	4.68%	5.60%	5.75%	6.41%	6.71%	6.94%
Return on Assets	0.31%	4.79%	4.25%	2.55%	3.54%	4.17%	4.18%	4.47%	4.74%
Return on Fixed Assets	2.36%	26.92%	29.24%	18.30%	26.65%	32.57%	33.91%	37.87%	42.19%
Revenue / Assets	69.49%	95.66%	97.25%	101.21%	83.59%	90.61%	93.56%	95.65%	98.11%
Depreciation / Capex	42.58%	78.11%	91.00%	123.26%	-210.06%	60.00%	78.00%	78.00%	78.00%
Depn / Sales	2.17%	3.14%	3.25%	3.00%	3.20%	2.57%	2.39%	2.24%	2.08%
Capex / Sales	5.10%	4.02%	3.57%	2.43%	-1.52%	4.28%	3.06%	2.87%	2.67%
Depn / Net FA	11.41%	16.88%	21.75%	21.78%	20.13%	18.16%	18.16%	18.16%	18.16%
Asset / Equity	1.27	1.38	1.35	1.36	1.34	1.36	1.37	1.38	1.38
Equity / Asset	78.75%	72.33%	74.01%	73.74%	74.59%	73.27%	72.87%	72.67%	72.41%
Total Debt / EBITDA	1.29	0.59	0.61	0.57	0.59	0.55	0.49	0.45	0.41

DCF - Hitachi Maxell (6810 JP)

(In Y million)	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18(E)	Mar-19(E)	Mar-20(E)	Mar-21(E)	SUM of Future FCF
Energy											
Sales			38,988	37,721	40,782	34,992	42,079	47,602	52,709	58,458	200,848
EBIT			2,468	1,031	1,960	2,031	5,086	5,001	5,173	5,818	21,078
Dep			2,034	2,242	2,068	1,911	1,724	1,724	1,724	1,724	6,894
Capex			-2,034	-2,242	-2,068	-1,911	-1,724	-1,724	-1,724	-1,724	-6,894
Industrial Material											
Sales			48,030	50,161	46,319	42,792	51,433	52,489	55,770	60,504	220,197
EBIT			1,998	1,825	1,528	2,965	3,077	3,359	3,811	4,365	14,611
Dep			1,380	1,427	1,316	1,216	1,097	1,097	1,097	1,097	4,388
Capex			-1,652	-719	-688	-579	-1,061	-816	-816	-816	-3,510
Electronic Appliance/ Consumer Product											
Sales			62,894	70,240	69,115	57,332	58,315	63,106	65,687	68,504	255,612
EBIT			2,890	2,334	3,818	2,571	568	2,096	2,696	2,829	8,189
Dep			1,247	1,404	1,295	1,196	1,079	1,079	1,079	1,079	4,317
Capex			-1,202	-821	-785	-662	-1,212	-932	-932	-932	-4,008
Total (Wkg Capital & CFs)											
Wkg Capital			-45	2,523	1,625	8,267	3,399	-2,844	-1,935	-1,867	
OCF			491	6,828	5,926	14,353	11,971	8,711	9,968	10,888	41,538
Capex			-5,575	-5,967	-5,575	-3,796	2,058	-6,500	-5,000	-5,000	-14,442
FCF			-5,084	861	351	10,557	14,029	2,211	4,968	5,888	27,096

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	2013/3	2014/3	2015/3	2016/3	2017/3	2018/3 (E)	2019/3 (E)	2020/3 (E)	2021/3 (E)
Assets									
Current Assets									
Cash and Cash Equivalents	5,163	15,297	38,770	42,017	51,930	52,239	55,304	59,290	63,807
Short-Term Investments	1,375	1,004	-	-	-	-	-	-	-
Notes and Accounts	23,644	30,804	32,587	29,543	25,554	28,715	30,865	32,940	35,455
Allowance for Doubtful	(377)	(408)	(339)	(458)	(619)	(696)	(748)	(798)	(859)
Inventories	19,112	21,285	18,657	13,900	13,163	14,791	15,899	16,967	18,263
Deferred Income Taxes	869	1,057	1,714	1,702	1,995	2,242	2,410	2,572	2,768
Other Current Assets	35,201	10,415	5,310	5,617	5,212	5,857	6,295	6,718	7,231
Total Current Assets	84,987	79,454	96,699	92,321	97,235	103,147	110,025	117,689	126,665
Property, Plant and									
Land	40,616	40,908	34,146	33,678	33,561	33,561	33,561	33,561	33,561
Buildings	10,132	11,485	8,127	7,665	6,505	9,046	11,001	12,956	14,910
Machinery and Equipment	9,161	14,429	13,221	12,302	7,754	10,783	13,113	15,443	17,773
Construction in Progress	1,506	1,697	1,977	1,513	2,380	3,310	4,025	4,740	5,455
Total	61,415	68,519	57,471	55,158	50,200	56,700	61,700	66,700	71,700
Accumulated Depreciation	-	-	-	-	-	-	1	2	3
Net Property, Plant and	61,415	68,519	57,471	55,158	50,200	56,700	61,701	66,702	71,703
Software & Other	570	1,288	1,025	1,047	1,023	1,023	1,023	1,023	1,023
Goodwill	-	-	-	-	-	-	-	-	-
	570	1,288	1,025	1,047	1,023	1,023	1,023	1,023	1,023
Other Assets									
Investments in and	-	-	-	-	-	-	-	-	-
Investment Securities	7,458	4,301	2,286	4,550	7,063	7,063	7,063	7,063	7,063
Software & Others	(10)	(209)	(241)	(225)	(212)	(212)	(212)	(212)	(212)
Deferred Income Taxes	443	534	535	477	929	929	929	929	929
Other	2,336	1,328	2,677	1,028	3,226	3,226	3,226	3,226	3,226
Total Other Assets	10,227	5,954	5,257	5,830	11,006	11,006	11,006	11,006	11,006
Total	157,199	155,215	160,452	154,356	159,464	171,876	183,755	196,420	210,397
Liabilities and									
Current Liabilities									
Bank Loans	1,633	1,694	-	-	-	-	-	-	-
Notes and Accounts	14,498	20,386	20,822	20,288	15,100	16,968	18,238	19,464	20,950
Accrued Expenses	6,750	6,701	6,234	6,946	6,039	6,786	7,294	7,784	8,379
Income Taxes	173	408	865	201	1,240	1,393	1,498	1,598	1,720
Other Current Liabilities	1,752	3,574	3,195	2,252	7,690	8,641	9,288	9,913	10,669
Current Portion of Long-	-	-	-	35	35	35	35	35	35
Total Current Liabilities	24,806	32,763	31,116	29,722	30,104	33,823	36,353	38,794	41,754
Long-Term Debt	-	6	325	457	422	422	422	422	422
Deferred Income Taxes	3,642	3,693	4,299	3,735	3,926	3,926	3,926	3,926	3,926
Termination and	3,733	5,429	5,934	6,350	6,542	6,542	6,542	6,542	6,542
Other Long-Term Liabilities	1,226	1,050	35	266	330	330	330	330	330
	1,633	1,700	325	492	457	457	457	457	457
Total Liabilities	33,407	42,941	41,709	40,530	41,324	45,043	47,573	50,014	52,974
Stockholders' Equity									
Common Stock	12,203	12,203	12,203	12,203	12,203	12,203	12,203	12,203	12,203
Additional Paid-in Capital	55,679	33,578	33,578	33,527	33,527	33,527	33,527	33,527	33,527
Legal Reserve	62,484	74,172	75,998	77,313	81,135	5,093	5,381	6,233	7,161
Retained Earnings	-	-	-	-	-	-	-	-	-
Treasury Stock	-	(996)	(996)	(996)	(996)	(996)	(996)	(996)	(996)
Total Stockholders' Equity	130,366	118,957	120,783	122,047	125,869	49,827	50,115	50,967	51,895
Accumulated other									
Comprehensive Income	1,512	954	529	303	(9,449)	75,286	84,347	93,718	103,808
Warrant	0	0	0	0	0	0	0	0	0
Minority Interests in	281	1,455	1,895	1,726	1,720	1,720	1,720	1,720	1,720
Total Stockholders' Equity	123,792	112,274	118,743	113,826	118,140	126,833	136,181	146,405	157,423
Total	157,199	155,215	160,452	154,356	159,464	171,876	183,755	196,420	210,397

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