25th September 2017

Stock Price: Y7,950
Market Cap: Y129.9bn
SPI[1]: 2%, ranked 34 / 2,144

STORM RESEARCH
ALL ABOUT IDEAS

Hogy Medical (3593) - Premium kits: Not rated

Japan's leading manufacturer of surgical kits is attempting to capitalise on Japan's need to improve domestic hospital efficiency. We await signs of material progress.

- ***Increasing depreciation from a new surgical kit manufacturing plant is condemning Hogy Medical to its second consecutive year of OP decline.***
- ***Whilst existing products such as Mekkin sterilisation bags & non-woven fabrics are undergoing gradual decline, surgical kit demand is increasing in line with efficiency improvements at Japan's pressured hospitals.***
- ***Increased capacity of premium kits is set to result from a new plant. In addition 90% of new factory processes are automated versus 40-50% at existing plants, thus we expect higher utilisation to be positive for margins.***
- ***Post plant construction we expect annual reductions in depreciation, combined with improving kit margins, to result in improved medium term OP growth prospects.***
- ***We also contend the shift to premium kits represents a transition phase for Hogy, as the company attempts to capitalise on Japan's demographic & healthcare issues & improve on its inconsistent earnings track record.***
- ***On 22x 3/20 earnings, with the stock having traded in line with Topix since 1999, we conclude the company needs to show material progress to establish investment conviction. We leave the stock not rated.***

BUSINESS OVERVIEW: Hogy Medical manufactures & sells medical products. 90% of sales fall into three product groups: Mekkin Bag sterilised storage packages, non-woven fabrics & surgical kits.

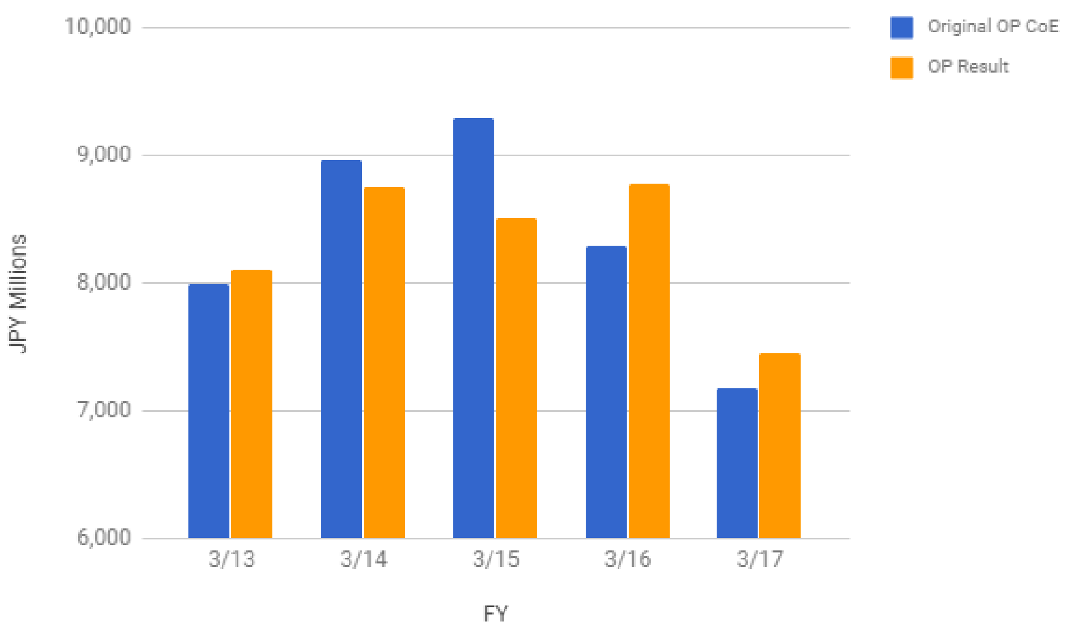
[1] **Storm Predictability Index:** A measure of earnings predictability derived from the standard deviation between forecast & actual OP achieved between 2009-2018, expressed as a ranking percentage out of 2,144 listed qualifying companies.

(JPY Millions)	Sales	YoY	OP	YoY	OPM	NP	YoY	EPS	P/E (x)
1Q 3/18 Results	9,159	1.1%	1,514	-27.3%	16.5%	2,606	82.5%	n/a	n/a
1H 3/18 CoE	18,960	3.5%	2,440	-40.3%	12.9%	3,180	18.4%	n/a	n/a
3/18 CoE	38,540	4.6%	5,300	-28.8%	13.8%	5,160	-10.8%	329.7	24.1
3/18 Storm Est	37,480	1.7%	5,800	-22.1%	15.5%	5,649	-2.4%	345.7	23.0
3/18 Consensus	38,304	3.9%	5,768	-22.5%	15.1%	5,357	-7.4%	340.7	23.3
3/19 Storm Est	38,650	3.1%	7,000	20.7%	18.1%	5,082	-10.0%	311.0	25.6
3/19 Consensus	40,224	5.0%	6,927	20.1%	17.2%	5,029	-6.1%	313.1	25.4
3/20 Storm Est	39,900	3.2%	8,200	17.1%	20.6%	5,953	17.1%	364.3	21.8
3/20 Consensus	42,208	4.9%	8,091	16.8%	19.2%	5,835	16.0%	362.0	22.0

*** FINANCIAL METRICS:**

P/B	Equity Ratio	Net debt/Equity	RoE	RoIC	WACC	Dividend	YoY	Dividend Yield	FCF Yield
1.4x	87.3%	-20.8%	7.8%	5.3%	5.8%	¥124	3.3%	1.56%	3.8%

*** RESULTS VERSUS FORECAST HISTORY:**



*** COMPANY OUTLINE:** Hoki Recording Paper Marketing was founded in Tokyo in 1955 by Dr Masao Hoki. Its most popular product Mekkin Bag was launched in 1964, in 2014 had 70% of domestic sterilisation bag market.

The company's name was changed to Hogy Medical in 1987 & it listed on TSE Second Section in 1991. As of September 2017 90% of sales fall into three product groups: Mekkin Bag sterilised storage packages, non-woven fabrics & surgical kits. Sales are almost entirely domestic, excluding less than 1% (approx Y300m) in Indonesia.

*** EARNINGS:**

- *1Q 3/18:* 1Q 3/18 sales were marginally below plan at Y9.2bn +1.1%YoY versus the 1H CoE of Y19bn +3.5%YoY. **Sales weakness stemmed from below plan premium kit product sales**. Premium kits were launched following the completion of a new manufacturing plant in June 2017. As premium kits are high value, it is taking longer to close related sales versus standard kits.

Conversely 1Q 3/18 OP was marginally above plan at Y1.5bn -27.3%YoY versus the 1H CoE of Y2.4bn -40.3%YoY, due to the positive impact of Yen strength on Hogy's Indonesian manufacturing subsidiary.

- *FY 3/18:* Premium kit plant construction brought total FY 3/17 depreciation to Y4.7bn +40%YoY, resulting in a -15.3%YoY OP decline to Y7.4bn. Similarly FY 3/18 depreciation is expected to reach Y6.5bn +38.3%YoY as plant costs peak. Hogy therefore forecasts **a second consecutive year of earnings decline** & estimates FY 3/18 OP of Y5.3bn -28.8%YoY. We expect the company's conservative FX assumption to enable it to beat its OP estimate despite early sales weakness. We forecast 3/18 OP of Y5.8bn -22.1%YoY.

- *Medium term:* Hogy anticipates a significant YoY OP growth recovery from FY 3/19 onwards, an outlook we regard as logical given the **scheduled Y600-700m annual reduction in depreciation**. We also expect business growth to be driven by high single digit annual growth in kit sales, notably high value premium kits & Opera Master contracts (details below). Despite the slow start to premium kit sales, we expect the accompanying efficiency improvements to encourage uptake among pressured domestic hospitals as awareness spreads, a situation we intend to monitor closely.

*** PRODUCT SALES BREAKDOWN:**

(JPY Millions)	FY 3/17	YoY	1Q 3/18	YoY	1H 3/18 CoE	YoY
Sterilisation products	3,634	-0.4%	888	-0.6%	1,792	-2.2%
- Non-woven products	9,406	-3.3%	2,312	-2.4%	4,510	-4.6%
- Other non-woven products	1,390	-1.8%	334	-2.6%	660	-3.5%
- Kit products	21,124	4.3%	5,299	3.2%	11,200	7.5%
- Steel instruments	224	-51.6%	52	10.6%	230	117.0%
Surgical products	32,144	0.9%	7,998	1.3%	16,600	4.1%
Treatment products	200	-3.4%	48	-5.9%	104	2.0%
Others	879	3.9%	224	4.7%	463	6.9%
TOTAL SALES	36,859	0.8%	9,159	1.1%	18,960	3.5%

*** STERILISATION PRODUCTS:**

- *Business outline:* In 1964 Hogy launched Japan's first domestic sterilisation package, the Mekkin Bag. Mekkin Bags are designed to contain contaminated items such as scissors prior to sterilisation, thereby preventing the spread of infection.

- *Market environment:* According to a 2014 Yano Research survey, Hogy had a dominant 70% share of the Y3.8bn domestic sterilisation bag market. Sales are declining at approx -1%YoY annually as Japan shifts toward disposable item usage, but the company is **maintaining the business as a cash cow** due to its leading market share & 50% GPM.

*** SURGICAL PRODUCTS:**

- Non-woven products:

- *Business outline:* In 1972 Hogy expanded its product range from Mekkin Bags to non-woven fabrics. Its disposable non-woven products, including surgical gowns, caps, drapes & equipment covers, incorporate waterproofing & multiple layers to provide greater contamination protection versus traditional washable cotton. **Non-woven fabric items are used in approx 60-70% of domestic operating rooms**.

As of 2014 the company had an approx 50% share of the domestic non-woven market due to its comparatively low sales prices. The business has an overall GPM of 34%.

- *Segment earnings:* Non-woven segment sales are declining approx -1-2% annually as prices decline & **individual item sales are gradually supplanted by kits** (details below). We believe the introduction of premium kits therefore risks hastening segment shrinkage. Hogy regards the decline as an inevitable consequence of its surgical kit focus & thus does not expect non-woven fabric volumes to recover. Rather it aims to prioritise sales efforts on its more profitable non-woven products.

- *Gowns:* Hogy has a leading 44.2% share of the Y6.1bn gown market, versus #2 Halyard Healthcare (11.6% share), #3 Japan Medical Products (10.3%), #4 Medline Japan (8.2%), #5 Livedo Corporation (7.4%) & multiple smaller operators.

Gown products lack differentiation thus price competition has intensified over the history of the business. Hogy sales prices have declined from **Y1,200-1,300 on its earliest items to approx Y200 for its most recent range**. In addition company efforts to reduce costs by manufacturing gowns in Indonesia are being stymied by increases in local labour costs. Gowns consequently have a GPM of just 8%. Hogy is therefore targeting automation at its Indonesian plant & terminating sales of gown products to customers where the business has become loss-making.

- *Drapes:* Hogy also has a leading 55.4% share of the Y12bn drape market, versus #2 Medline Japan (10.8%), #3 Japan Medical Products (10.7%), #4 Livedo Corporation (8.3%), #5 Kawamoto Corporation (6.5%) & smaller operators.

Drapes are more customisable to a doctor's preferences than gowns, such as in terms of size or whether a bag is supplied. Hogy can therefore add value & command higher margins.

- Other non-woven products: Within the company segments, 'non-woven products' refers to products such as gowns which are manufactured in-house. The 'other non-woven products' section refers to non-woven items such as masks which are **procured from other manufacturers**. Hogy does not plan to manufacture the majority of 'other' products in house due to the equipment required & the typically low margins on segment items.

- Kit products:

- *Business outline:* In 1994 Hogy began combining its non-woven items with products procured from other manufacturers to create surgical kits. The company manufactures 60-70% of kit items & procures the remaining materials. On average each kit contains 10-20 items, but the company has gained permission for inclusion of 20,000 different items from other manufacturers within its kits.

The wide range of available items allows for a high degree of customisation per medical institution, surgery or individual doctor. Kit sales enable Hogy to counteract price declines on individual non-woven products & increase total sales volumes.


** Caesarean kit (photo from Hogy Medical Corporate Brochure (2015), p.17)*

- *Margins:* Due to the high degree of customisation, kit products commanded a GPM of 52% before construction began on the new premium kit plant. The accompanying depreciation & low utilisation caused the kit product GPM to decline to 34% as of 1Q 3/18, but Hogy anticipates YoY GPM growth from FY 3/19 as both factors improve. We also expect a positive GPM impact from the **high value & automated processes involved** in premium kits.

Whilst hospital budgetary constraints limit the maximum GPM achievable, Hogy expects GPM improvement to continue over a 10 year timeframe & believes a kit GPM of 50-60% is necessary to achieve the company's long term OPM target of 30%.

- *Market environment:* Hogy had a majority 54.6% share of the Y34.6bn domestic kit market as of 2014, versus #2 Japan Medical products (10.9%), #3 Livedo Corporation (10.5%), #4 Kawamoto Corporation (5.2%) & 18.8% split among other operators.

- *Structural demand:* The aging population & domestic hospital consolidation are increasing the strain on hospital staffing & resources. Conditions are also being exacerbated by the **relative inefficiency of Japanese hospitals**. Whilst Japan successfully reduced the average stay in hospital acute care facilities from 24.8 days in 2000 to 17.2 days in 2013, the 2013 figure compared to 7.7 days in Germany, 6 days in the UK & 5.4 days in the US.

Hospital budgets are also seeing a negative impact from inefficiency. As of 2016 **72.9% of domestic hospitals operated at a deficit**. A move among multiple hospitals to begin charging via a Diagnostic Procedure Combination (DPC), involving fixed payment amounts versus payments scaled for services provided, is increasing motivation to reduce hospital stays.

The government's Medical System Reform Plan aims to restructure hospital facilities in Japan to improve overall efficiency. It plans to reduce the number of advanced acute & acute hospitals from 1,576 as of 2014 to 844 in 2025, implying a doubling of annual surgeries per hospital from 2,284 to 4,265.

- *Kit solutions:* Hogy's surgical kits are designed to enable efficiency improvements. Pre-prepared kits **eliminate any time required to select & gather materials**. Each kit also contains appropriate amounts of each item required for the operation, simultaneously reducing waste from over-preparation & avoiding pauses in surgery due to a lack of materials. In addition kits **optimise inventory for the number of operations conducted**, thereby reducing inventory control work, shortening order lead times & improving storage efficiency.

The subsequent reduction in labour hours improves working conditions for staff & increases the number of operations a hospital is able to conduct, with subsequent improvements in hospital profitability.

- *Opera Master:* Under Hogy's standard kit sales model, kits are typically procured by a specific department versus the company's preference for supplying an entire hospital. Regular & widespread usage of kits also generates more visible improvements to hospital efficiency.

Hogy therefore launched its Opera Master product in 2004. Each hospital has the option of signing a single Opera Master contract, typically spanning one year, for which it gains **complete access to Hogy kits**. Orders can be as small as one unit at a time & are delivered the day before the operation to reduce inventory.

Hogy personnel are also assigned to the hospital to consult on efficiency improvements such as surgery scheduling & staff allocation, using Hogy's Surgery Management System. Hospitals typically **increase kit orders as they start to appreciate the benefit**s.

- *Contracts:* Hogy gains on average 30-40 new contracts annually & receives approx 10 cancellations. It had **289 total contracts at the end of FY 3/17**. The company is targeting a pool of 1,000 facilities within the total 8,000 hospitals in Japan. It therefore has contracts with close to 30% of its target base.

- *Cancellations:* Contracts are typically cancelled in hospitals where patient numbers are declining, resulting in efficiency becoming low priority, or due to a lack of consensus in hospitals where full agreement from relevant personnel is required.

- *Fees:* Per contract Hogy charges Y100,000 per month to cover the fees of Hogy personnel allocated to the hospital. Its remaining revenue stems solely from kit sales.

Kits purchased via Opera Master contracts are typically priced at **Y14,000-15,000 versus an average Y7,000 for non-Opera Master kits** (equating to a total average kit price of approx Y10,000). Opera Master kit GPMs are therefore higher than non-Opera Master kits. Hogy Medical expects the average kit sales price to rise gradually as Premium Kit sales grow.

- *Sales:* Hogy is successfully increasing Opera Master as a proportion of the kit segment. Within Y5.3bn +3.2%YoY 1Q 3/18 kit sales, Opera Master sales comprised Y3.7bn +6.4%YoY. Hogy Medical aims to increase Opera Master sales from 39.1% of total sales as of FY 3/17 to 50.9% in FY 3/21, whilst reducing regular kits from 17.8% of sales in FY 3/17 to 13.1% in FY 3/21.

- *Premium kits:*

- *Packaging improvements:* The manufacturing plant completed in June 2017 is designed to produce new premium kits. Standard kits are packaged primarily to avoid breakages, such as by wrapping fragile items in non-woven fabric products. The packaging method places a height limit on the kit & therefore the number of items included.

Premium kits are capable of containing a greater range of items than standard kits. A standard kit typically includes 20-30% of the items required for a surgery. In contrast, a premium aortic valve replacement surgery kit can source 239 of the 286 items required, or 83%. As well as reducing the time required for selecting items, Hogy expects certain premium kit prices to total as much as Y60,000-70,000 with full item inclusion. We therefore expect growth in premium kits to be **positive for segment sales volumes & margins**.

Premium kits also package items in order of use, in contrast to the existing packaging method. The new method therefore reduces surgery preparation time & further improves efficiency.

- *Automation:* In addition the new plant is **90% automated versus 40-50% automation at existing plants**. We therefore expect increasing new plant utilisation to prove positive for overall margins, in line with the long term targets outlined above.

- Steel instruments:

- EMARO: The steel instruments segment comprises multiple new products, of which the main focus is robotic endoscope holder EMARO. Endoscopic surgery typically requires two people: a camera assistant to operate the endoscope & a surgeon to carry out the procedure. The surgery therefore incurs high labour costs & the images produced by human camera operators are subject to natural tremors.

EMARO replaces the camera assistant with a robotic camera holder that can be operated by a gyro sensor worn on the surgeon's head, enabling the surgeon to angle the endoscope intuitively. As well as reducing operation labour, the EMARO can produce image stability.

- *Competition:* EMARO is not manufactured by Hogy Medical, but procured from a university venture company. There are currently no domestic competitors.

- *Earnings:* Hogy forecasts 20 unit sales in FY 3/18 priced at approx Y15m each (with variations depending on the hospital), but sales in the 1HTD have been marginally below plan. Growth in the medium term is likely to be gradual & Hogy does not expect the business to become a significant percentage of overall sales.

*** TREATMENT PRODUCTS:** The treatment products segment is a small segment comprised of miscellaneous minor items such as gloves.

*** SUD REPROCESSING:**

- *Law change:* In July 2017 Japan amended the Pharmaceutical Affairs Law to regulate the reprocessing of SUDs (single use (medical) devices), similar to existing regulations in the US. Reprocessing involves collecting used SUDs from hospitals, then cleaning, disassembling, assembling, sterilising & packaging the items to be used again. The law limits reprocessing to controlled facilities & states that reprocessed products must comply with the same levels of safety & effectiveness as the original products.

- *Market potential:* Hogy aims to enter the SUD reprocessing industry due to synergies with its existing products for increasing hospital efficiency & profitability. Within Y2.7trn of annual domestic medical equipment shipments, SUDs comprise Y1.5trn. Approx Y140bn is suitable for reprocessing. Excluding the expected proportions of new & unused items & those disposed of, Hogy estimates **an annual reprocessed SUD market scale of Y42bn**.

- *Competition:* The #1 US operator is Stryker Sustainability Solutions, which Hogy expects to enter Japan with the law revision. There are also a number of large overseas companies which Hogy believes are capable of establishing a Japanese reprocessing business, but Stryker is the only company to date to express specific intentions.

Hogy believes the market is one where first mover advantage is likely to be significant & thus aims to develop a business as rapidly as possible. We regard the high market shares in the company's existing products, where it was typically a market pioneer, as justification for its ability to **effectively assess the domestic reprocessing market & capture a large share**.

- *Timeline:* Hogy aims to begin safety tests & apply for business approval by the end of FY 3/18, with the target of gaining approval in FY 3/19. It plans to launch the business in FY 3/20.

- *Investment costs:* Approx 50 types of medical item are licensed for reprocessing in the US & Hogy expects a similar range to become available in Japan. The necessary safety & quality tests cost Y5-10m per item. Hogy therefore expects the approval process to cost a maximum of Y500m.

The company possesses a R&D lab & does not yet require a facility for cleaning & remanufacturing SUDs, but believes the construction or acquisition of one is likely to be necessary if the business reaches sufficient scale. It plans to evaluate the appropriate level of investment as development progresses.

*** CAPEX & DEPRECIATION:** The new premium kit plant is situated in Tsukuba, Ibaraki prefecture, next to one of two existing kit plants. The other kit plant is located in Miho, Ibaraki. Having completed its new kit plant construction, Hogy is not considering further large investments in the medium term. It aims to restrict annual capex to Y1-2bn for the medium term.

It plans to depreciate the new plant machines over 7 years & the building over 30 years. Annual depreciation is expected to decline by -Y600-700m YoY for the next 3-4 years.

*** MTP:** In the medium term Hogy targets Y47.5bn sales & Y10.7bn OP (implying an OPM of 22.5%) by FY 3/21. It targets Y100bn sales & a 30% OPM in the longer term.

*** OVERSEAS:** Hogy's Indonesian business (Hogy Medical Sales Indonesia) is expected to remain minimal in the medium term. Hogy originally anticipated greater demand for its products, but to date has received orders from limited locations such as high end private hospitals. Local awareness of contamination risks remains generally low & Hogy believes it is likely to take time for standards to improve to the point where it can grow sales.

*** M&A:** Hogy is not aggressively considering M&A at present. It is likely to consider M&A if it locates a favourable opportunity for kit items or technology, but believes the number of companies with sufficient synergy are small.

*** FX:** FX sensitivity varies annually, but in FY 3/18 a Y/$1 move is anticipated to have a Y30m impact on annual OP, with a stronger Yen positive for earnings. Hogy Medical is assuming a conservative annual rate of Y/$120.

*** MANAGEMENT:** Hogy Medical was founded as stationery retailer Hoki Meishodo in 1955 by Mr Masao Hoki, which made the shift to medical products via electrocardiogram recording paper. Mr Hoki stepped down from the role of President to become Chairman in June 2005. Since 2007 he has held the titles of Honorary Chairman & Founder.

He was succeeded as President by his son, Mr Jun-ichi Hoki. Jun-ichi Hoki entered the company in 1984 & gained experience in various areas including sales, manufacturing & corporate planning. He targets stable management & improving the equity ratio, RoE & profitability, albeit without specific target figures.

*** SHAREHOLDER RETURNS:** Hogy originally aimed to maintain a 30% dividend payout ratio, but the ratio is increasing as profits decline & Hogy continues to raise the dividend. It increased the dividend to Y120 +Y4 YoY in FY 3/17 & plans to pay Y124 +Y4 YoY in FY 3/18, on payout ratios of 32.5% & 37.6% respectively. It plans to resume a 30% payout ratio when profit growth recovers.

The company also plans to invest a percentage of its cash into shareholder returns in the medium term. It has yet to decide the method of returns but a share buyback is under consideration.

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