

Advanex Inc.

5998

Tokyo Stock Exchange First Section

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■ Summary

Expanding global supply capabilities for Tier 1 mega-suppliers

Advanex Inc. <5998>, a major manufacturer of precision springs, provides many products with top shares in both Japanese and global markets driven by its excellent technology and development capabilities. It expanded business in the automotive industry, its largest market, by extending reach in areas, customers, processing technologies, and business fields. It is picking up the pace of expanding global supply capabilities to address the emergence of mega-suppliers and their requirements. Upfront investment costs are pressuring profits because of the need to build supply capabilities to support volume output plans for 2-3 years from now. Nevertheless, Advanex has a bright outlook with a growing number of major deals and many new customer account openings. It is cultivating medical and infrastructure and housing equipment segments as a third pillar after automotive and OA equipment businesses. Advanex has a clear event outlook for the medical market.

1. Responding to structural change in the automotive industry

The automotive industry is transitioning from “coordinated technology” in the analog era to “combined technology” in the digital era with steady advances in technology standardization and parts commoditization. These phenomena seen in PC and digital electronics industries are spreading to the automotive industry due to inroads by electronic systems and IT. Usage of common parts that transcend vehicle rank and model requires stricter quality control. Furthermore, automakers request global supply from parts firms in order to manufacture suitable amounts in appropriate locations and build just-in-time supply chains. Major Tier 1 parts firms are growing faster than automakers due to the transformation to mega-suppliers. Advanex has established unique positioning of expansion of global supply capabilities in fields such as precision springs.

2. FY3/17 results and FY3/18 outlook

Advanex reported setbacks of 6.4% in net sales and 63.0% in operating profit in FY3/17 due to ¥11 of appreciation against the US dollar and weaker demand. While automotive business and standardized product and other business grew, OA equipment dropped sharply and medical equipment eased on one-time factors. The need to obtain certification of the upgraded quality management standard at the newly launched Saitama plant delayed the start of volume production for foreign-capital firms by a year, thereby putting pressure on earnings. Advanex guides for a 12.0% YoY rise in net sales and 61.8% gain in operating profit in FY3/18 using a tough internal forex rate of ¥100/\$.

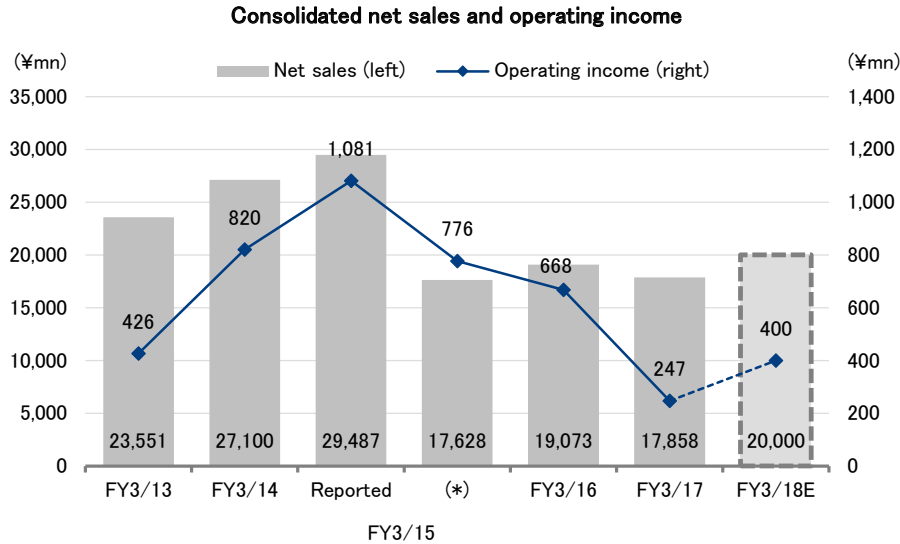
3. Moving quickly to expand global operations

Advanex is promoting a “blue ocean” strategy as a global niche top firm that supplies products with performance and cost advantages that utilize differentiated manufacturing technology in regions requested by customers for market segments separated from leading manufacturers. It is moving quickly to expand global supply capabilities in order to leverage its strengths and realize high profitability. It aims to double production surface area in the eight years through FY3/19.

Key Points

- Follows a “blue ocean” strategy as a global niche supplier
- Posted lower net sales and profits in FY3/17 because of yen appreciation and a slump in OA equipment business
- Aims to double production surface area at global plans in eight years

Summary



Note: Excluding most of the plastics business
 Source: Prepared by FISCO from the Company's financial results

History and company overview

Provides products with top market shares in Japan and other countries

1. History

The first-generation president founded a spring factory in Tokyo in 1930. In 1946, this factory was incorporated as Kato Spring Works Co., Ltd., and in 2001, the company name changed to Advanex Inc. While Advanex previously acquired a manufacturer of motor parts and company that makes and sells automotive plastic parts, it was unable to realize sufficient synergies and profitability and became a specialized manufacturer of precision springs following a process of selectivity and focus that involved selling or exiting the motor business in FY3/11, hinge business in FY3/13, and plastics business in FY3/15. Consolidated net sales totaled ¥29,487mn in FY3/15 with 59.8% from precision springs and 40.2% from plastics. In FY3/16, net sales were down 35.3% YoY and operating profit fell 38.2% because of the transfer of the subsidiary that handled the plastics business at period-end. Precision springs only reported a 3.4% increase in net sales and 4.2% decline in operating profit.

Since the 1980s, Advanex has released many products that have become global hits and has gained top shares of the markets for these products. Advanex has held a 70% share of the Japanese market for tape pads for audiotapes, a 50% share of the global market for flat springs for videotapes, an 80% share of the global market for shutters for 3.5-inch floppy discs, a 50% share of the global market for hinges for cellular phones, and a 90% share of the Japanese market for center hubs for optical discs. Advanex also holds a 60% share of the Japanese market for springs to protect needles implanted in the human body.

History and company overview

Advanex was early in entering overseas markets and set up its first overseas subsidiary in 1971 in the US. In following years, it established subsidiaries in Singapore, the UK, Hong Kong, Thailand, China, Vietnam, Mexico, Germany, and Indonesia. The UK subsidiary, founded in 1988, purchased a leading British maker of springs and now operates two plants. Advanex Europe Ltd. received the manufacturing division excellence award in the 2016 Nottingham State Business Awards sponsored by Nottingham Post. This was the subsidiary's second award after the best company award received in 2012. Main products are precision springs for medical equipment and components to strengthen fasteners for automobiles and airplanes. The UK subsidiary received technology support from Japan for its product development activities, and it is the most profitable subsidiary in the Advanex group.

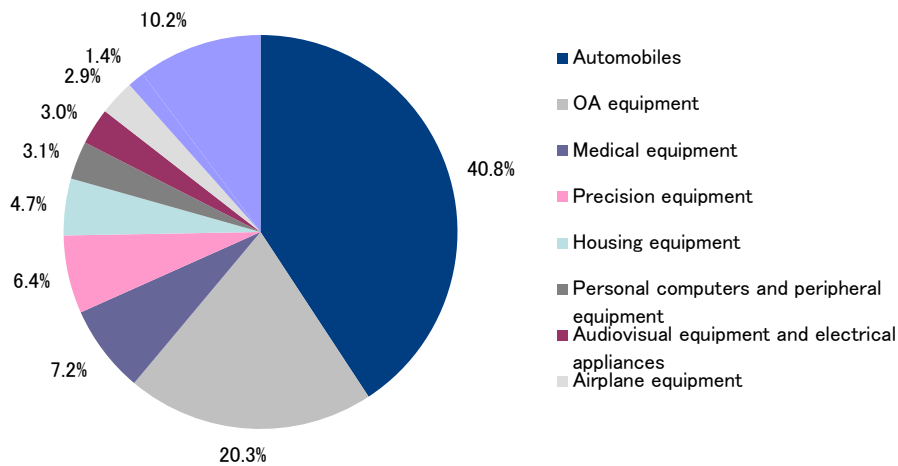
Given these developments, Advanex adopted a business strategy of being a global niche top player.

In 1964, the Company listed its shares on the Second Section of the Tokyo Stock Exchange, and in 2004, the shares were elevated to the First Section.

2. Business description

Advanex operates a single business segment as a specialized manufacturer of precision springs, but discloses breakdowns of consolidated net sales by application and location. Net sales composition by market in FY3/17 was automotive at 40.8%, OA equipment at 20.3%, medical equipment at 7.2%, precision equipment at 6.4%, housing equipment at 4.7%, PCs and peripheral equipment at 3.1%, audiovisual equipment and electrical appliances at 3.0%, airplane equipment at 2.9%, cell phones and information terminals at 1.4%, and others at 10.2%. The automotive market has been the largest destination since FY3/15.

Breakdown of consolidated sales by market (FY3/17)



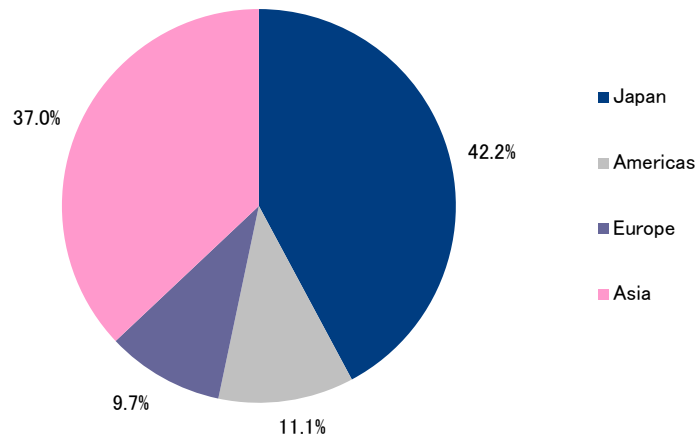
Source: Prepared by FISCO from Company materials

Advanex has about 2,000 business counterparts and handles roughly 15,000 product types. It engages in transactions with German and Japanese auto parts manufacturers battling for global No.1 and No.2 positions.

History and company overview

Net sales composition by location consists of Japan at 42.2%, the Americas at 11.1%, Europe at 9.7%, and Asia at 37.0%. Japan continued to book losses due to cases of R&D and sales activities in Japan, but production in other countries. The Americas region faced difficult earnings conditions in FY3/17 due to ramp-up costs for a new plant. Europe generated profits in medical equipment business with high profitability. Asia benefited from upbeat automotive business in Thailand and other countries and successful efforts to improve earnings in China.

Consolidated net sales composition by region (FY3/17)



Source: Prepared by FISCO from Company materials

Business strategy

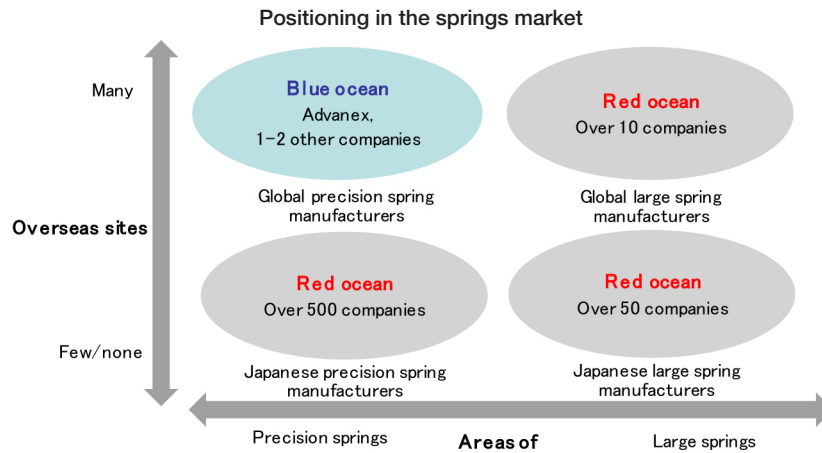
Follows a “blue ocean” strategy as a global niche supplier

1. Follows a “blue ocean” strategy as a global niche supplier

We look at the business strategy from an STP (segmentation, targeting, and positioning) perspective. Advanex is the only maker of many of its products, which has allowed it to earn high market shares in Japan and globally. Initially venturing into overseas business in 1971, the Company now has many plants and sales offices in the Americas, Europe and Asia. It has therefore developed its automobile products business and medical equipment businesses globally, and it can supply global manufacturers in a timely fashion. Advanex narrows the market based on the strength of these needs, identifies areas where it can obtain a global niche top position, and extracts target customers. It formulates the business strategy by area, customer, field, and processing technology and product in order to strengthen its positioning. The Company is now stressing four businesses in which it is very competitive and for which the markets are growing rapidly: automobile products, medical equipment, housing equipment, and infrastructure products.

Business strategy

Advanex pursues a blue ocean strategy of priority development of markets with few rivals where it can leverage strengths. In the automotive spring market, major domestic spring firms specialize in chassis springs and other large products and have minimal direct competition with Advanex in precision springs. Advanex's rivals are over 500 small and very small firms. These companies generally lack the resources to enter overseas markets.



Source: Prepared by FISCO from Company materials

2. Characteristics of automotive-related business

(1) Parts procurement difficulty from Tier 2

Automotive business involves R&D outlays, capital investments, and other costs and requires a lengthy amount of time until sales are booked. These aspects create difficult conditions for liquidity at small and very small manufacturers. Customers also request rigorous quality control because of risk to human life, dictating passage of certifications. They expect fulfillment of supply responsibility and continually ask for cost reductions. Nevertheless, once a supplier is selected, demand remains stable and continuous as long as the vehicle model stays in production. Small Japanese spring manufacturers with low-volume output at cheap prices are not rivals in the global market, and Advanex has fostered segmentation from large spring manufacturers mainly delivering large springs.

Automakers are increasingly producing suitable amounts in appropriate regions for the purpose of curtailing forex fluctuation risk and also raising local procurement rates to obtain beneficial treatment. Volume production takes place overseas even if new vehicle development and prototyping occurs in Japan. Parts manufacturers participate in new vehicle development projects by finished vehicle firms as a “design-in” process and develop parts alongside of the overall development. They must collaborate with the R&D headquarters in Japan from the early phase of development.

Tier 2 suppliers come under four groups. Companies that already have an overseas presence, such as Advanex, can collaborate during development in Japan, supply products through local production, do not require significant efforts or time prior to beginning supply, possess price responsiveness, and guarantee quality and reliability. These suppliers are the most effective source of parts procurement for Tier 1 firms compared to the other three groups. When Tier 1 firms bring along Tier 2 suppliers without an overseas presence, the second group, additional time is required to make decisions, such as ramping up a new plant, and pricing must be adjusted in exchange for bringing them along. When overseas sites procure parts from plants in Japan, the third group, pricing becomes an issue because of forex rate fluctuation risk as well as tariffs and transportation costs. Development and cultivation of local suppliers, the final group, takes effort and time in technology guidance and certification, has difficulties in rapid collaboration with R&D headquarters in Japan, and still confronts concerns in quality and reliability.

Business strategy

Level of difficulty in parts procurement from Tier 2 firms for Japanese Tier 1 suppliers

	Japanese Tier 2 firms with existing overseas operations Advanex	Japanese Tier 2 firms setting up jointly	Imports from Japanese Tier 2 firms	Development and cultivation of local suppliers
Effort and time required (to begin supply)	○	× Decisions, new plant ramp-up	○	△ Technology guidance, certification, etc.
Pricing	○	△ Price consideration for making the move	× Tariff, transportation costs, etc.	◎
Quality and reliability	○	○	○	×
Collaboration with R&D headquarters in Japan	○	○	○	×
Level of parts procurement difficulty for Japanese Tier 1 suppliers	Relatively easy	Difficult	Difficult	Difficult

Source: Prepared by FISCO from Company materials

(2) Structural changes in the automotive industry

Electronic equipment production shifted from “coordinated technology” in the analog era to “combined technology” with interface standardization in PCs and digital home electronics. This change enabled emerging economies with little technology accumulation to manufacture electronic equipment. In the automotive industry with electronic systems making steady inroads, we expect advances in combinations of standardized modular parts as the mainstream production format for electric vehicles (EVs). Developing and producing individualized parts by model faces issues in the development period, capital investments, and manufacturing costs. To simultaneously diversify auto models and lower costs, auto firms are likely to standardize and share platforms, develop common components (parts), standardize designs, and extensively adopt modules that can be shared. With component sharing, usage of modular parts will transcend chassis sizes and types.

Discussions are taking place toward industry standardization of technologies used in automated driving and connected cars. Automobiles utilize about 30,000 parts, and these parts comprise half of overall costs. Commodity parts offer low pricing because of the large production volume. Wider usage hence contributes to cost savings. Automakers have unique parts on the scale of a few hundreds of thousands versus a much larger order of a few million for commodity parts. Added value from parts is shifting from automakers to parts firms through standardization and modularization. Global Tier 1 parts firms are emerging as mega-suppliers to multiple car manufacturers, in contrast to their previous role as sub-contractors to specific firms. Advanex wants to be a Tier 2 supplier that deals directly with Tier 1 mega-suppliers.

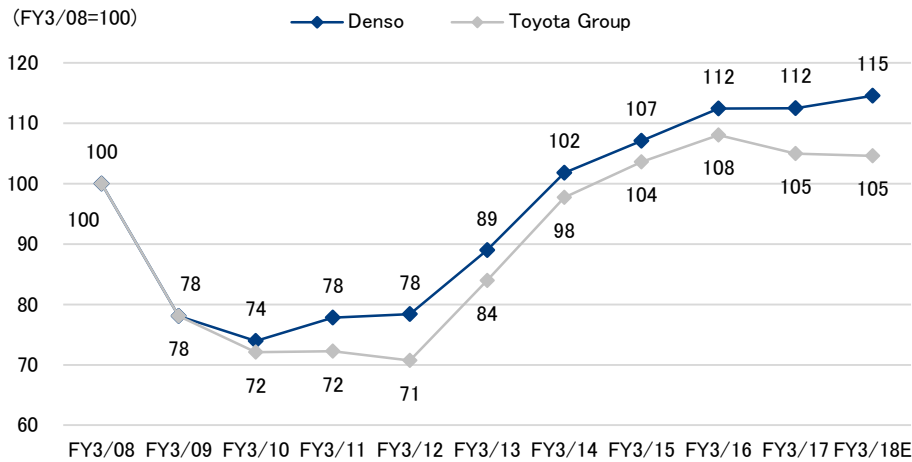
Mega-supplier formation is more advanced in the US and Europe than in Japan. Global No.1 and No.2 Germany-based Robert Bosch and Continental have sales at 2.1x and 1.7x the level at top Japanese supplier Denso <6902> respectively.

We compared sales at Toyota Motor Corporation <7203>, a top global automaker, and Denso, the leading Japanese Tier 1 supplier, looking at FY3/08 prior to the bankruptcy of Lehman Brothers in September 2008 and subsequent global financial crisis and trends thereafter. With consolidated sales in FY3/08 as 100, both Denso and Toyota dropped to 78 in FY3/09. Disparity widened in the following years with the FY3/18 forecast for putting Toyota at just 105 versus Denso at 115.

Sales at Toyota-affiliate Denso are becoming less dependent on the Toyota Group. The group dependency was 49.6% in FY3/08. It increased to 52.4% in FY3/10 after the global financial crisis, but dropped to 45.8% in FY3/17.

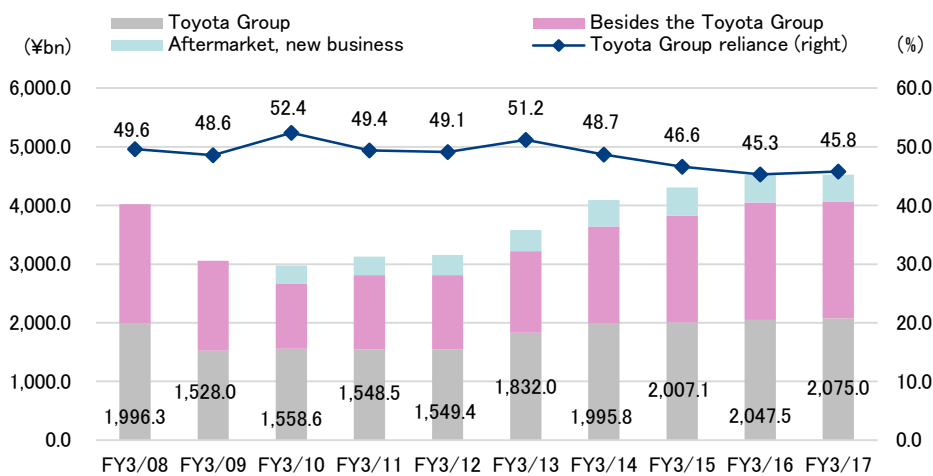
Business strategy

Consolidated sales trends at Denso and the Toyota Group



Source: Prepared by FISCO from various materials

Trend in Denso's sales by customer and reliance on the Toyota Group



Source: Prepared by FISCO from various materials

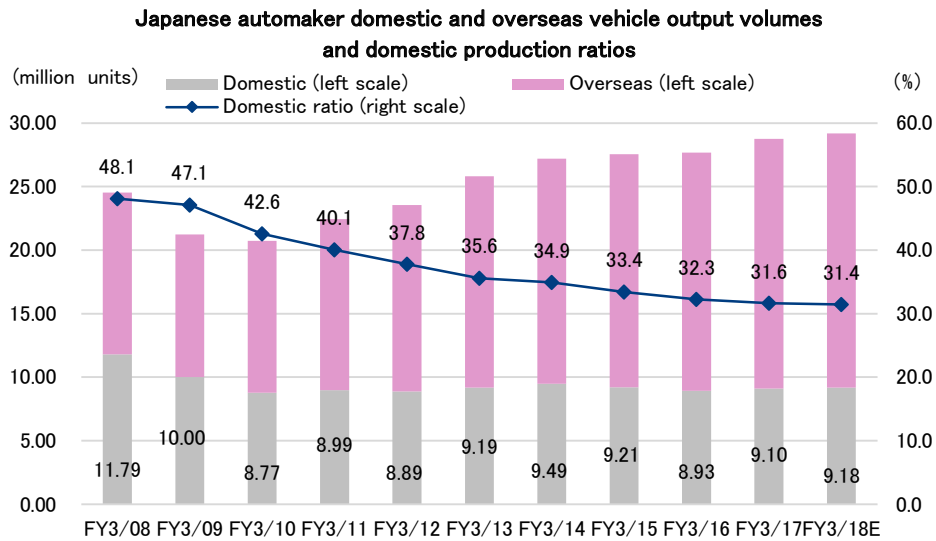
(3) Growing overseas output at Japanese automakers

Domestic vehicle output by Japanese automakers was 11.79mn vehicles in FY3/08. However, it slumped to 8.89mn vehicles in FY3/12 because of the Great East Japan Earthquake in March 2011 after the global financial crisis, yen appreciation, and other factors. Denso forecasts 9.18mn vehicles in FY3/18. Overseas output, meanwhile, totaled 12.73mn vehicles in FY3/08 and climbed to 14.65mn vehicles in FY3/12. The FY3/18 outlook expects 20.02mn vehicles, which is more than twice domestic output. The domestic output ratio declined from 48.1% in FY3/08 to 37.8% in FY3/12 and appears to be headed to 31.4% in FY3/18.

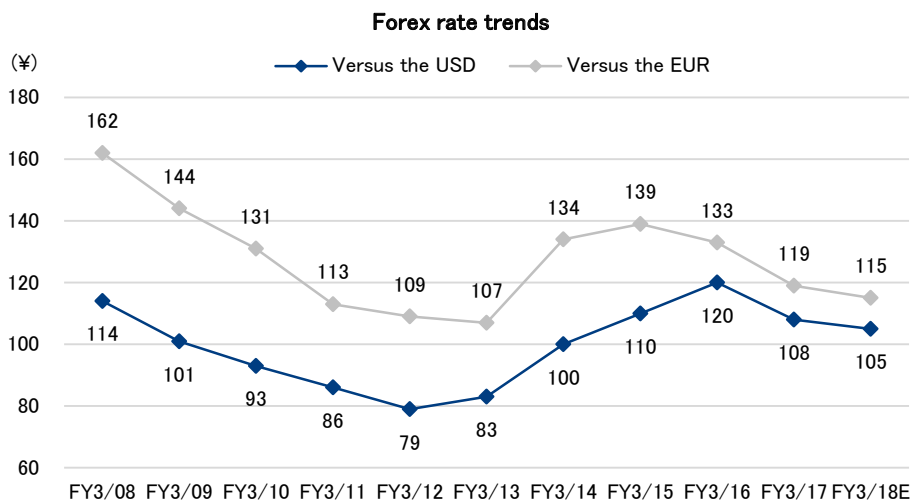
Business strategy

Forex rates were ¥114/USD and ¥162/EUR in FY3/08. The yen strengthened to ¥79 and ¥109 respectively in FY3/12. It then depreciated to ¥120/USD (FY3/16) and ¥139/EUR (FY3/15) due to Abenomics and the Bank of Japan's ultra monetary easing and low interest rates. Toyota's FY3/18 forecast rates are ¥105/USD and ¥115/EUR.

Automakers pursuing manufacturing policies of suitable amounts in appropriate regions, without steep increases in domestic output, despite yen depreciation.



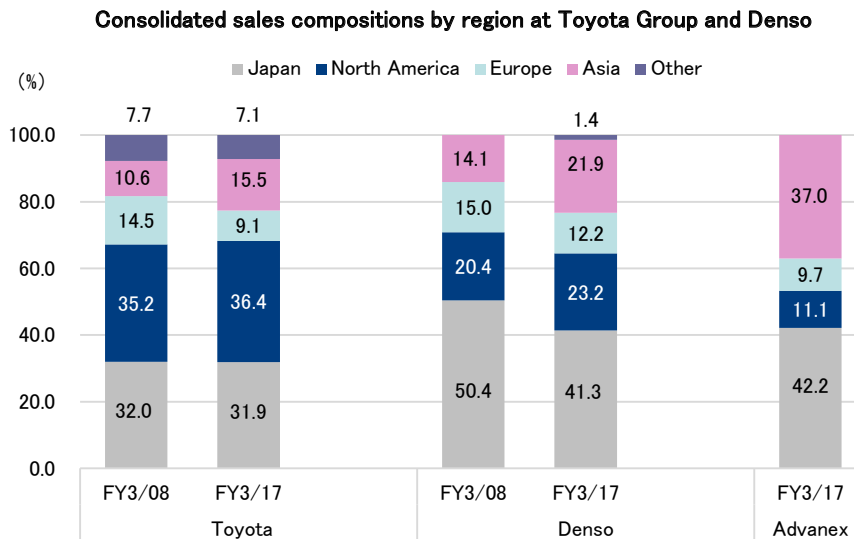
Source: Prepared by FISCO from various materials



Source: Prepared by FISCO from various materials

Business strategy

Trends in sales composition by region indicate that Toyota's Japan share did not change much at 32.0% in FY3/08 and 31.9% in FY3/17. Denso's Japan share during the same period, meanwhile, fell from 50.4% to 41.3% as other regions climbed considerably with North America up from 20.4% to 23.2% and Asia up from 14.1% to 21.9%. Advanex has developed global supply capabilities to accommodate Tier 1 production sites and requests.



Source: Prepared by FISCO from the Company's results materials

(4) Advanex's global production operations

Advanex's global production operations consist of five domestic sites and 15 overseas sites. It is expanding domestic and overseas production capacities and opening new sites to bolster the sales network in accordance with the medium- to long-term plan.

We review trends from the past few years. Advanex acquired Funabashi Electronics Co., Ltd., which specializes in deep drawing technology, in April 2015 and absorbed the Chiba and Miyagi plants. It merged the Miyagi plant, which was fairly small, into the Chiba plant in March 2017. Advanex started operating the Saitama plant, a new "smart factory" with emphasis on labor savings and automation, for automotive business in January 2016 (Honjo City, Saitama). Outside of Japan, it acquired PT. Yamakou Indonesia, which is based in Indonesia and manufactures and sells precision metal presses and insert molded parts, and converted it to a consolidated subsidiary in January 2017. This acquisition secured a production site in Indonesia and also obtained a list of a few tens of customers, including Japanese auto parts firms. In Latin America, Advanex began operations of a new plant in Mexico, its second in this country, in April 2016. The No.2 plant in Querétaro is recruiting demand from Japanese as well as US/European automotive parts manufacturers with operations in this area. It curtailed initial investments by leasing an existing building. Advanex also acquired operations from Electronic Stamping Corporation, a manufacturer of automotive press parts located in California (US), in September 2016. This plant is near Advanex's existing plant and is being positioned as the No.2 plant in the US. The transfer included facilities and other assets and a customer base of about 30 companies. Human resources can be utilized to support the Mexican plants. In Europe, the Germany-based sales companies started operations in April 2016 and Advanex established a manufacturing subsidiary in Czech in December 2016 with plans to begin output in 2018. Advanex is steadily acting on measures to attain goals from the medium-term business plan.

Business strategy

Recent events

Timing	Country	Content
April 2014	Japan	Acquired shares in Funabashi Electronics and converted it to a subsidiary, started operating plants in Chiba and Miyagi
March 2015	Japan	Transferred all shares in Daiichi Kasei Holdings Co., Ltd. to ABICO Group
January 2016	Japan	New plant in Honjo City (Saitama), built the Saitama plant and began operations
March 2016	India	Established a liaison office in Pune, India, the Company's third liaison office in India
April 2016	Mexico	Started operating the No.2 Mexican plant as the 12th overseas production site
April 2016	Germany	Started operating the new sales company, Advanex Deutschland GmbH
September 2016	US	Acquired California (US)-based press manufacturer Electronic Stamping Corporation
January 2017	Indonesia	Acquired additional shares in PT. Yamakou Indonesia (mainly makes precision metal presses) and converted it to a subsidiary
March 2017	Japan	Merged the Miyagi plant into the Chiba plant

Source: Prepared by FISCO from Company materials

3.Expanding and deepening technologies

Although Advanex, which accumulated processing technologies in its effort to become a comprehensive metal processing company, sold the group company that handled its plastics business in March 2015, it retains the insert moldings business, which combines metal pressing and extruded plastic moldings. In April 2014, it bought Funabashi Electronics, a leader in Japan with technology for deep drawing fine materials, a type of metal pressing and absorbed this business. Advanex introduced deep drawing technology at its cutting-edge Saitama factory and eventually plans to deploy it at plants overseas, including China and the UK. It currently utilizes wire springs, flat springs, insert molds, deep drawing, and other technologies.

Processing technology by area

Processing technology	Japan	North America	Latin America	Europe	China	Southeast Asia	India
Wire springs	●	●	●	●	●	●	●
Flat springs	●	●	●	●	●	●	●
Insert molds	●		●		●	●	
Deep drawing	●			●			

Note: ● existing, ● new

Source: Prepared by FISCO from Company materials

Advanex developed technologies that apply spring technology and acquired companies with unique processing technologies to solidify competitive advantages. These moves have enabled it to shorten production time and lower costs by applying the new processing method to replacements for existing items. Customers with awareness of the new processing method's efficacy subsequently place orders for new developments, fueling a positive cycle.

(1) Automotive parts

Advanex pursues a business strategy of extending reach in areas, customers, fields, and processing technology and products and thereby expanding its business "coverage." It has broadened scope in the automotive market by entering areas where it can leverage strengths and with a high difficulty and quality strictness hurdles.

When it first entered the automotive market, Advanex was supplying wire springs, flat springs, and forming and other processing techniques only to optional car navigation systems and other car electronics and antennas. Its area scope was Japan and Thailand. Advanex broadened market areas to instruments and interior from 2005, powertrains from 2010, and safety and control (advanced driver assistance system; ADAS), HVs and EVs, and automated driving from 2015.

Business strategy

Inquiries are increasing for parts used in devices with large electric currents found in HVs and EVs. These parts utilize insert-molding technology for integration formation metals and resins. Products from other companies use a plate for the metal portion. Advanex, meanwhile, excels in wire processing with proprietary forming technology and holds advantages in simplified wiring and costs for large electric currents. Despite its Tier 2 positioning, Advanex is not a sub-contractor supplier and harnesses proposal capabilities cultivated in transactions with OA equipment manufacturers.

Expanding and deepening the automotive market from four perspectives

Period	Field	Processing technology	Area expansion	Customers
2000-	Car electronics, antennas	Wire springs, flat springs, forming	Japan, Thailand	NA
2005-	Instruments, interior	Inserts collars	US, China	NA
2010-	Powertrain	Insert molds	UK	NA
2015-	Safety and control (ADAS) HV, EVs, automated driving	Deep drawing, face grinding	Indonesia, Mexico, Czech, India, Vietnam	NA

Source: Prepared by FISCO from Company materials

Advanex has seen a steep rise in inquiries for sensor parts that use deep drawing technology obtained from absorbing Funabashi Electronics. Position sensors and speed sensors are leading examples. We expect steadily rising demand for onboard sensors due to increase in vehicle models equipped with automatic braking and other ADAS features and growing sophistication in the automotive industry. Advanex supplies parts for not only sensors, which correspond to the input portion of electronic control in automobiles, but also valves, pumps, injectors, and other mechanical parts that are the output portion.

Advanex views 2016-17 as a phase of fostering business for deep drawn parts. It must go through mold production, sample shipment, and customer quality verification and testing processes prior to the start of full-fledged volume production. The outlook projects income contributions from deep drawn parts from the latter half of FY3/18 and full-fledged volume output of new products at the Saitama plant from 4Q FY3/18.

(2) Strategic product: “Insert collars”

Insert collars are used to strengthen plastic fastenings. As global regulations on fuel efficiency have been tightened, automakers have increased their use of plastic components to lighten automobiles. Insert collars are metallic components used to strengthen the parts of plastic components into which bolts are affixed. A single automobile uses 100-200 insert collars. Insert collars are the main strategic product made at the Company’s new Saitama factory. Advanex aims to sell ¥2,000mn of insert collars in FY3/20 and to expand these sales in following years.

Advanex’s insert collars cost about half as much as competing insert collars because it switched production from the conventional cutting process to a process that combines multi-forming and pressing. A metal sheet or strip can be pierced, crushed and bent in one step through multi-forming, and the entire width of the sheet of strip can be used, leaving little scrap. Since Advanex makes the metal molds used to produce insert collars, it can respond to customer requests quickly. Advanex’s insert collars are clearly superior to the products made by other companies through forming processing because its forming technology is based on knowledge of springs. Ordinarily, when a piece of metal is hollowed out and rounded, it tends to return to its original shape through a restoration process. This causes openings between joints, through which plastic could leak. However, Advanex’s insert collars leverage spring technology to constrict around the plastic they surround, eliminating the risk of leakage. It also proposes insert collars in dimple shapes to reinforce the connection with plastic, thereby improving pull-out strength and rotational torque resistance. Advanex plans to obtain a patent for the dimple shape.

Business strategy

Conventional products with the cutting process



Source: Company materials

Advanex's insert collars and usage examples



(3) Medical equipment parts

Advanex's sales of products for the medical equipment market in FY3/17 were ¥1,290mn, 7.2% of total sales. The medical equipment market seems appropriate for the Company, as it aims to be a provider for global niche markets. As the global population and global medical expenditures are increasing, the global market for medical equipment is likely to grow steadily. Furthermore, the trend of increase in self-administered health care indicates that the demand for disposable medical products is likely to increase. Medical equipment has a long product life cycle, few model changes, and provides large profits. On the other hand, the cost of developing medical equipment and producing it on a trial basis is high, this equipment must be tested for a long time before it can be commercialized, and the plan for developing and commercializing a piece of medical equipment may be abandoned. If these negative factors, which constitute barriers to entry, can be overcome, medical equipment can provide large profits consistently.

A good example of successful medical equipment is the precision springs for medical use sold by Advanex Europe, the UK subsidiary. Such products account for a little over 40% of the subsidiary's sales and a higher proportion of its profits. In 1999, the subsidiary received an order from a large European pharmaceutical company for precision springs for use in inhalant devices that dispensed fixed amounts of asthma medicine in mist form. This order launched the rapid growth of the subsidiary. Springs from other companies did not meet product standards, but the Niigata factory developed springs that did meet these standards and was successful in receiving orders. Subsequently, equipment for manufacturing the new springs was shipped to Advanex Europe, which began to mass produce the springs.

Advanex supplies wire springs, flat springs, and deep drawn parts for use in asthma medicine inhalers, autoinjectors, automatic blood drawing devices, and other medical devices. Asthma inhalers are a disposable product equipped with a function to spray out a certain amount of medicine for self-administration. Advanex supplies wire springs and plans to expand production to the US from around 2018. Autoinjectors are part of a self-medication kit used by patients that are also disposable. Advanex provides push springs and torsion springs and will add deep drawn parts and begin set supply of these items from around 2021. Additionally, diabetes patients draw blood for self-measurement of blood sugar. Advanex supplies wire springs for the automatic blood drawing device that is a testing instrument.

Asthma medicine inhalant



Source: Company materials

Autoinjectors



Automatic blood drawing device



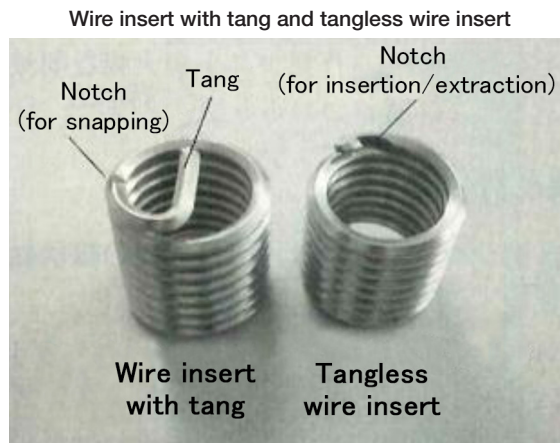
Business strategy

(4) Standardized parts

Advanex focuses on sales of standardized parts with broad applications and large demand potential. Its main standardized parts are tangless inserts used to strength screw holds in soft materials, such as aluminum, and LockOne devices that prevent loosening of bolt-nut connections. Advanex developed these items leveraging its technology advantages. They offer better cost performance and operational efficiency than existing products and cannot be easily replicated by other firms.

a) Tangless wire inserts for strengthening screw holes

Tangless wire inserts are used to strengthen screw holes in soft materials, such as aluminum. Airplanes are made of light materials, such as aluminum and carbon fiber-reinforced plastic. Screw holes in these materials must be reinforced, and a single airplane may require reinforcement for from several ten thousands to several hundred thousands of screw holes. Tangless wire inserts have been replacing other kinds of reinforcement for several years now, and they are projected to increase their share of the market for airplane screw hole reinforcements.



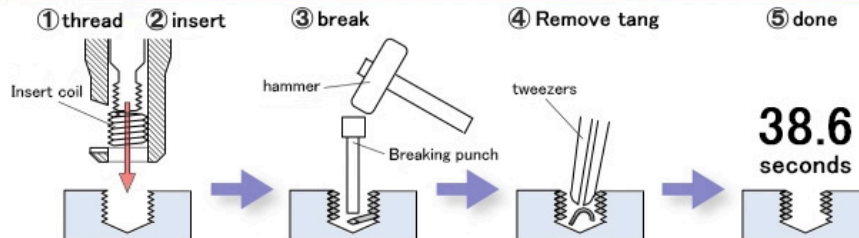
Source: Company materials

The website of Accurate Inc. contains the photograph shown below of wire insert with a tang next to a tangless wire insert. Tangs are wire projections used to hook onto the material into which they are inserted. After insertion, the tangs must be broken off and removed. The tangless wire inserts developed by Advanex contain notches for insertion and extraction, rather than tangs. These tangless inserts offer several advantages over inserts with tangs: 1) they are easier to apply, greatly reducing the time for threading and insertion, 2) they pose no risk of forgetting to recover the tang or scratching the material into which the hole is bored while cutting or extracting the tang, 3) they are the same shape at both ends, so there is no need to ensure that they are being inserted from the correct end, 4) they can be removed, and 5) they comply with the National Aerospace Standards of the US.

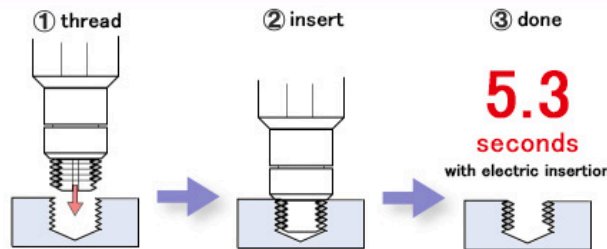
Business strategy

Procedures for threading and inserting inserts with tangs and tangless inserts, and times required for these procedures

Procedure for insert with tangs



Procedure for tangless wire insert



Source: Accurate Inc. website

Tangless wire inserts have many characteristics for which they are more highly valued than conventional products. They are also highly profitable because they do not use more materials or steps to produce than conventional reinforcements. Tangless wire inserts require special tools to use, one of several obstacles to their use. Consequently, Advanex had limited their sale to certain categories of client, mainly makers of airplanes. To expand the market for these inserts, Advanex sold low-priced entry kits containing hole drills, insertion tools, extraction tools, and other pieces of equipment. These kits lower the hurdle for potential users with the product, thereby targeting wider utilization.

b) LockOne device to prevent loosening of bolt-nut connections

A promising product for housing equipment and infrastructure is the “LockOne” spring that prevents loosening of nut-to-bolt connections and failures. The “LockOne” spring targets use in railways, condominiums and other buildings, highways, electric power equipment, and other areas. However, the spring must be certified, which lengthens time to adoption. It is already being used by subway systems. Specialty trading companies for each market handle sales.

This spring passed a test in which it was subjected to shock vibrations by a machine conforming to the National Aerospace Standard 3350 of the US. In tests of equipment to prevent the loosening of bolt-to-nut connections in electric railway lines by a railway technical research institute, the “LockOne” spring significantly outperformed competitors. Against a perfect overall score of 8, the “LockOne” spring was awarded a score of 7, whereas three competing products received scores of 0.0, 4.0 and 4.5. The institute downgraded its appraisal of the “LockOne” spring by one point because it appeared to be loose, but it found no problems with the performance of the spring.

Business strategy

Double nuts, locknuts and the “LockOne” spring were tested for failure. They were subjected to shock vibrations until the nuts fell from their bolts. To reduce error, two sets of each product were tested simultaneously. The double nuts failed after 1,200 – 1,800 vibrations. The locknuts failed after 2,500 – 4,500 vibrations. Nuts secured by the “LockOne” spring did not fail even after 30,000 vibrations. In a follow-up test, nuts secured by the “LockOne” spring did not fail after 180,000 vibrations.

Products competing with the “LockOne” spring internalize the function of preventing nut-to-bolt loosening, but this function must be modified for each nut. The “LockOne” spring can be attached easily to the top of a nut using a socket wrench sold at any hardware store, and the “LockOne” spring is not expensive. Users of the “LockOne” spring do not have to inspect nut-to-bolt connections for security often. Since the shape of a “LockOne” spring is complex, Advanex is the only company currently able to mass produce the spring.

LockOne nut loss prevention



Source: Company materials

The “LockOne” spring is now being used to secure the bolts that fasten directional signs and shields on some highways. On structures such as highways, where vibrations are frequent, nut-to-bolt connections loosen easily. The “LockOne” spring can be used to secure the nuts that fasten acrylic sheets that partition the balconies of condominium units. A large construction company has used this spring for this purpose at a building it erected in Vietnam. Utilized in power transmission networks and solar panels by the electricity industry.

LockOne nut loss prevention



Source: Company materials

Standardized products raise awareness through B2C business, such as nut sales, with the aim of cultivating B2B business and recruiting customized product orders. In fact, Advanex has received LockOne development requests to change materials and shapes to meet company-specific applications from customers with knowledge of the standardized products.

Business trends

Net sales and profits fell in FY3/17 due to yen appreciation and a slump in OA equipment demand

1. Summary of operating results in FY3/17

Advanex reported FY3/17 results with ¥17,858mn in net sales (-6.4% YoY), ¥247mn in operating income (-63.0%), ¥346mn in ordinary income (-48.4%), and ¥67mn in net income attributable to the owners of the parent company (-88.6%). While net sales were roughly on track with forecast, earnings missed by 45.1% for operating income, 13.5% for ordinary income, and 69.5% for net income.

Operating income dropped by ¥421mn YoY, including setbacks from a weaker marginal profit ratio due to fluctuation in product mix and other factors (-¥63mn), higher fixed costs and expenses from opening the Saitama plant and No.2 Mexican plant (-¥361mn), and yen appreciation against the USD and GBP (-¥166mn). The yen strengthened from ¥120.2/USD in FY3/16 to ¥109.2. Advanex runs global manufacturing operations so the stronger yen affects earnings in the conversion of income from overseas businesses to yen for consolidated statements, rather than undermining the profitability of exports. Forex sensitivity from a single-yen change against the USD works out to about ¥100mn in net sales and ¥13mn in operating income.

FY3/17 consolidated results

	(¥mn)										
	FY3/16		FY3/17			YoY		vs. forecast			
	Result	Ratio to sales	Forecast	Result	Ratio to sales	Change	% change	Change	% change		
Sales	19,073	-	17,700	17,858	-	-1,214	-6.4%	158	0.9%		
Gross income	5,165	27.1%	-	4,466	25.0%	-699	-13.5%	-	-		
SG&A expenses	4,497	23.6%	-	4,218	23.6%	-279	-6.2%	-	-		
Operating income	668	3.5%	450	247	1.4%	-421	-63.0%	-203	-45.1%		
Ordinary income	671	3.5%	400	346	1.9%	-325	-48.4%	-54	-13.5%		
Net income attributable to the owners of the parent company	587	3.1%	220	67	0.4%	-520	-88.6%	-153	-69.5%		

Source: Prepared by FISCO from Company materials

(1) Trends by location

Japanese sales were roughly flat, despite upbeat automotive business, because of decline in OA equipment business. Ramp-up costs for the Saitama plant expanded the regional deficit from FY3/16's ¥401mn to ¥572mn. Sales in the Americas region dropped 5.7% YoY due to the strong-yen impact. Earnings slipped from FY3/16's profit (¥28mn) to a ¥161mn loss because of higher fixed costs and expenses related to ramp-ups of the No.2 Mexican plant and No.2 US plant. Europe posted lower sales and profits due to strong-yen impact and one-time decline in medical business. In Asia, the main earnings source, income expanded in Thailand and efforts to improve profitability in China succeeded. While sales declined because of the stronger yen, profit climbed 3.4% YoY to ¥724mn.

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 5998 Tokyo Stock Exchange First Section | http://www.advanex.co.jp/corp/ir_e/

Business trends

Breakdown of consolidated sales and operating income by geographical market

		FY3/16		FY3/17		YoY	
		Amount	Ratio to sales/ profit margin	Amount	Ratio to sales/ profit margin	Change	% change
Japan	Sales	7,539	39.5%	7,531	42.2%	-7	-0.1%
	Operating income	-401	-5.3%	-572	-7.6%	-170	-
Americas	Sales	2,108	11.1%	1,987	11.1%	-121	-5.7%
	Operating income	28	1.4%	-161	-8.1%	-190	-
Europe	Sales	2,286	12.0%	1,725	9.7%	-561	-24.6%
	Operating income	350	15.3%	248	14.4%	-101	-29.1%
Asia	Sales	7,138	37.4%	6,613	37.0%	-524	-7.4%
	Operating income	700	9.8%	724	10.9%	23	3.3%
Total	Sales	19,073	100.0%	17,858	100.0%	-1,214	-6.4%
	Operating income	668	3.5%	247	1.4%	-421	-63.0%

Source: Prepared by FISCO from Company materials

(2) Trends by market

Automotive sales increased 4.2% YoY, though rose 11.8% excluding the forex impact. OA equipment sales, meanwhile, dropped by a sharp 13.3% because of design changes that eliminated use of Advanex's metal parts in printer cartridges and paperless advances driven by wider use of tablets. This segment contracted to 20.3% of total sales in FY3/17, a major contrast to having previously been at 45%. The ¥3,631mn in OA equipment sales was about ¥2,300mn below forecast. Larger-than-expected decline in this market delayed the timing for realization of numerical goals from the current medium-term business plan. Medical equipment sales fell 28.5% YoY due to a delay in obtaining approval of a generic drug at a customer firm. Cell phones and information terminals sales declined by a hefty 51.7% because of elimination of antenna business for mobile phones that former Funabashi Electronics had been handling.

Breakdown of consolidated sales by market

		FY3/16		FY3/17		YoY		YoY change (excluding forex impact)	
		Sales	Ratio to sales	Sales	Ratio to sales	Change	% change	Change	% change
Automobiles		6,984	36.6%	7,278	40.8%	294	4.2%	827	11.8%
OA equipment		4,186	21.9%	3,631	20.3%	-555	-13.3%	-344	-8.2%
Medical equipment		1,794	9.4%	1,290	7.2%	-503	-28.5%	-287	-16.0%
Precision equipment		1,183	6.2%	1,144	6.4%	-39	-3.3%	48	4.1%
Housing equipment		910	4.8%	832	4.7%	-78	-8.6%	-21	-2.3%
Personal computers and peripheral equipment		634	3.3%	558	3.1%	-76	-12.0%	-52	-8.2%
Audiovisual equipment and electrical appliances		539	2.8%	537	3.0%	-2	-0.4%	52	9.7%
Airplane equipment		634	3.3%	519	2.9%	-115	-18.1%	4	0.6%
Cell phones and information terminals		509	2.7%	246	1.4%	-263	-51.7%	-254	-49.9%
Others		1,700	8.9%	1,823	10.2%	123	7.2%	280	16.4%
Total		19,073	100.0%	17,858	100.0%	1,214	-6.4%	254	1.3%
Exchange rate		¥120.2/\$		¥109.2/\$				Converted at the previous-period rate	

Source: Prepared by FISCO from Company materials

Business trends

2. Financial position and management indicators

Gross asset value at end-FY3/17 climbed by ¥1,723mn YoY to ¥18,747mn owing to the PT. Yamakou Indonesia acquisition and capital investments. Interest-bearing debt increased because of the use of additional loans to cover funds. Advanex's equity ratio dropped from 38.4% in FY3/16 to 33.3%. ROE moved sharply lower from FY3/16's 8.7% to 1.1% due to extraordinary losses and a decline in net income attributable to the owners of the parent company to ¥67mn.

Balance sheet and management indicators

	(¥mn)		
	FY3/16	FY3/17	Change
Current assets	9,957	10,957	999
(Cash and deposits)	3,465	3,906	441
Fixed assets	7,066	7,790	723
Total assets	17,024	18,747	1,723
Current liabilities	5,852	7,445	1,592
Fixed liabilities	4,593	5,004	410
Total liabilities	10,446	12,449	2,003
(Interest-bearing debt)	5,090	6,619	1,528
Net assets	6,578	6,298	-279
Stability			
Current ratio	170.1%	147.2%	
Equity ratio	38.4%	33.3%	
D/E ratio (times)	0.78	1.05	

Source: Prepared by FISCO from Company materials

Consolidated cash flow statement

	(¥mn)		
	FY3/16	FY3/17	Change
Cash flows from operating activities	1,415	773	-641
Cash flows from investing activities	-2,824	-1,302	1,561
Cash flows from financing activities	951	1,266	315
Balance of cash and cash equivalents at the end of the fiscal year	2,669	3,261	-591

Source: Prepared by FISCO from Company materials

■ Forecasts

FY3/18 forecast projects earnings recovery, though uses conservative forex rate and other assumptions

1. Consolidated outlook for FY3/18

Advanex guides for higher sales and profits in FY3/18 consolidated results at ¥20,000mn in net sales (+12.0% YoY), ¥400mn in operating income (+61.8%), ¥380mn in ordinary income (+9.7%), and ¥240mn in net income attributable to the owners of the parent company (+257.1%). This view assumes ¥9.2 YoY of yen appreciation to ¥100/USD. In FY3/17, forex income under non-operating income helped lower the decline margin in ordinary income with improvement from FY3/16's ¥40mn loss to a ¥5mn profit. Advanex expects non-operating income to slip in FY3/18 from FY3/17's ¥99mn profit to a ¥20mn loss due to not including miscellaneous income booked in FY3/17 and factoring in a forex loss versus the previous year's profit. We see a possibility of profit boosts from reversal of the extraordinary loss from a provision to the product warranty allowance (¥73mn) booked in FY3/17, depending on developments. Advanex appears to have adopted conservative forex and other assumptions after its experience of lowering forecast in FY3/17.

Consolidated outlook for FY3/18

	(¥mn)					
	FY3/17		FY3/18E		YoY	
	Result	Ratio to sales	Forecast	Ratio to sales	Change	% change
Sales	17,858	-	20,000	-	2,142	12.0%
Operating income	247	1.4%	400	2.0%	153	61.8%
Ordinary income	346	1.9%	380	1.9%	34	9.7%
Net income attributable to the owners of the parent company	67	0.4%	240	1.2%	173	257.1%

Source: Prepared by FISCO from Company materials

2. Review of the timing for reaching numerical goals in the medium-term business plan

The current medium-term business plan targeted ¥35,000mn in net sales, ¥4,000mn in operating income, and an 11.4% operating income margin in FY3/20, the final fiscal year. However, the operating income goal is 10x the level projected in FY3/18. Advanex hence is reviewing postponement of the target fiscal year. Factors prompting the review include OA equipment sales at half of the plan level, slower progress with new plants, and yen appreciation versus the plan's ¥120/USD assumption.

Forecasts

3. Current situation and outlook for new plants

Progress with the medium-term business plan has been poor thus far, but the outlook is bright. We do not expect OA equipment sales, which have been halved (dropping more than anticipated), to recover to the previous level, though they should bottom out and flatten. Automotive business faced a delay in ramping up volume output for a foreign-capital Tier 1 supplier at the Saitama plant. The International Automotive Task Force (IATF) updated its quality management standard from TS 16949 to IATF 16949. While IATF 16949 adheres to the ISO9001 structure and requirements revised in 2015, organizations with TS 16949 certification must complete the transition to IATF 16949 by September 2018. The Saitama plant needs to address the updated standard, and this is delaying the quality management certification and start of volume output by a year from the initial plan. At the Chiba plant, sales were cut in half due to ending the cell phones business, but automotive and precision equipment inquiries exceeded expectations and the operating rate rebounded. The No.2 US plant acquired by Advanex provided a site, production technology, and operators. Facilities, however, were outdated. Advanex is introducing its own production format and striving to improve quality and productivity. It has added flat springs to the product line-up too with the aim of recruiting more demand and thereby broadening business opportunities. The No.2 Mexican plant has lagged in major customer support, and Advanex addressed this situation with output at the California plant. Large deal inquiries from Japanese manufacturers not working with the California plant have been stronger than expected. The acquired Indonesian plant has a portfolio of Japanese Tier 1 customers in the low teens and delivered a profit. New inquiries are increasing too.

Current situation and outlook for new plants

Plant	Format	Start of operations Consolidation	Current situation	Future
Saitama factory	Newly built	January 2016	△ Delay due to updating quality management certification	○ Slight delay, though on track with the plan
Chiba factory	M&A	April 2015	× Sales halved due to completion of cell phone business	◎ Stronger automotive and precision inquiries than expected
No.2 Mexican factory	Newly built	August 2016	× Delay in the transfer of major customer business	◎ More automotive and Japanese customer inquiries than expected
No.2 US factory	M&A	September 2016	× Updating production operations to Advanex's format	◎ Adding flat springs and broadening business
Indonesia factory	M&A	January 2017	○ Profits started	○ Increase in new automotive inquiries

Aims to double production surface area at global plants in eight years

4. Expansion of global production capabilities

Advanex began its reinforcement of production capacity with the No.2 plant in Thailand in 2012, added the Changzhou plant (China), absorbed Funabashi Electronics, built the Saitama plant, acquired PT. Yamakou Indonesia (Indonesia plant), built the No.2 Mexican plant, and acquired Electronic Stamping Corporation (No.2 US plant). It also plans to complete the Czech plant, No.2 Vietnam plant, and Indian plant and expand capacity at the Saitama plant in 2018. In Vietnam, the current plant is operating at full capacity and lacks room. Advanex intends to add flat springs to output items for the new plant. Its goal is doubling global production surface area in the eight years through FY3/19.

Forecasts

Automotive business has a large volume output effect and receives global orders from mega-suppliers. In fact, Advanex arranged 200 accounts in the automotive business over the past three years. Orders for the same part begin in Japan and then spread to Thailand, China, and India. Automotive parts go through a process of inquiry, estimate preparation, and repeated designing and prototyping over a period of 2-3 years before beginning volume output. Additional overseas orders avoid the designing and prototyping process. Increased output volume improves proficiency and gives Advanex the ability to meet cost reduction requests from customers. A key driver of the large anticipated increase in profitability in the medium-term business plan is SG&A expenses and other costs not rising as much as sales growth.

In the medical business, which is highly profitable, Advanex experienced an unexpected decline in FY3/17 sales owing to delayed acquisition of approval for a generic asthma drug at a customer. Anticipated events in FY3/18 are the start of volume production of catheter hubs in 1Q, increased output of indwelling needle springs in 3Q, and the start of generic asthma drug business in 4Q. It also plans to begin volume output at the US plant and launch operations at the Czech plant in FY3/19. Volume output of auto injector springs and deep drawn parts is scheduled to start in FY3/21. While Advanex had mainly catered to developed countries with aging societies, such as Europe, in past years, the number of patients with lifestyle-related diseases is growing explosively in emerging countries with large populations too because of changes in lifestyles. Advanex's global supply capabilities are a valuable asset in this business too because medical-related customers also operate worldwide.

Events and schedule for automotive and medical markets

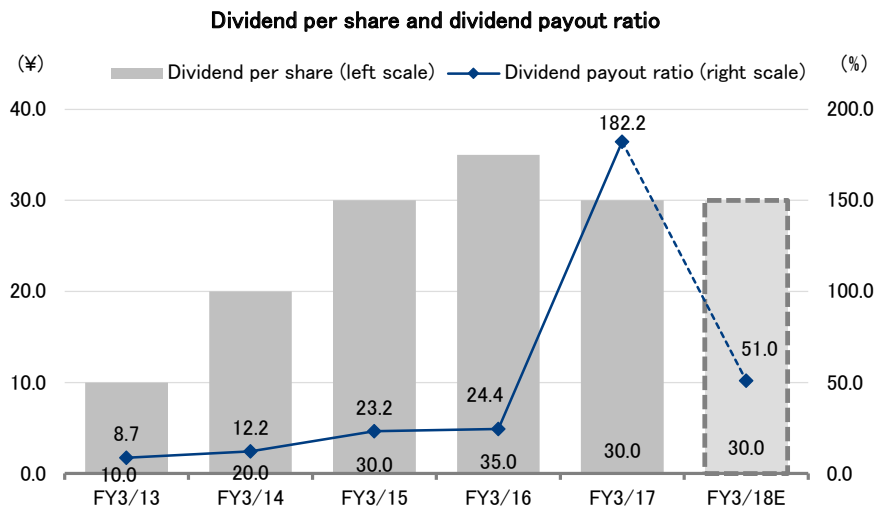
	Automobile market	Medical market
FY3/18	1Q Start of Indonesian subsidiary consolidation	Start of catheter hub volume output
	2Q	
	3Q	Increase in indwelling needle spring output
	4Q No.2 Mexican plant contributions	Start of product supply for generic asthma medicine
FY3/19	1Q	Start of volume output for asthma medicine at the US plant
	2Q Acquisition of quality management certification at the Saitama plant	
	3Q Launch of insert collar standardized products and ramp-up of deep drawing product volume output	Start of volume output for asthma medicine at the US plant
	4Q Start of volume output for the No.1 customer in Europe	
FY3/20	1Q Czech plant contribution	
	2Q	
	3Q No.2 Vietnam plant and Indian plant contributions	
	4Q	
FY3/21	1Q Ramp up of insert molds for electric vehicles	
	2Q Start of volume output for multiple new customers	
	3Q	Start of volume output for auto injection devices
	4Q	

Source: Prepared by FISCO from Company materials

Shareholder return policy

Intends to keep the dividend at ¥30 per share

The current medium-term business plan targets a dividend payout ratio of 30%. Advanex set the dividend at ¥40 per share for a 27.3% payout ratio in initial FY3/17forecast. Due to weaker earnings, however, it revised the dividend to ¥30, a decline of ¥5 YoY. The dividend payout ratio was 182.2% (exceeding 100%) with net income per share at ¥16.46. Advanex is keeping the FY3/18 dividend target at ¥30.0, a 51.0% payout ratio.



Source: Prepared by FISCO from Company materials



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