September 1, 2021

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Notice of Issuance of a Sponsored Research Report

Tsubakimoto Chain Co. (hereafter "the Company") decided to release a sponsored research report in order to improve communication with our shareholders and investors, and to help deepen their understanding of the Company. The research report was provided by Capital Goods Research & Advisory Co. The report does not carry any investment recommendation – it is solely prepared to provide an easy-to-understand explanation of the Company's business model, industry trends, performance trends, long-term business strategy, and other information that has already been made public. For details, please refer to the attached document.

Company Report

TSE-I / Machinery

September 1, 2021

Analyst

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Tsubakimoto Chain (6371)

Under new Mid-Term Plan, the Company will plant seeds for new businesses toward "Where Tsubaki wants to be by 2030"

★ On June 14, 2021, Tsubakimoto Chain (The "Company") announced its Long-Term Vision 2030 and Mid-Term Plan 2025 (for FY2021 - FY2025). Setting the next five years as a planting period to achieve what the Company wants to be by 2030 ("aiming to become a corporate group that contributes to solving social issues through Linked Automation technology"), the Company is poised to allocate 60% of ¥50-60 billion FCF to be created over the next five years to new business operations. Through the efforts of strengthening existing businesses in terms of profitability among other things, the Company aims for ¥300-320 billion net sales, 9-11% operating income margin (or ¥27-35.2 billion operating income, for reference), and 8% or more ROE for FY2025. The Company will keep the dividend payout ratio at a 30% level as its priority is advance investment, but intends to increase dividends in line with profit growth.

★ The Company's Chain Operations and Motion Control (MC) Operations handle a lot of parts and equipment with top market share, such as those that transmit the power of various motors. In addition, some products in the Chain Operations and orders in the MC Operations are linked to orders in Yaskawa Electric's motion and robot businesses, making them hidden FA/motor-related businesses. Among the Company's foreign competitors in the chain and mobility businesses, Rexnord (US) and BorgWarner (US) are shifting and diversifying their businesses through M&A transactions, while RENOLD (UK) clings to existing businesses and falls into excess debt. Capital markets tend to highly value the Company's capacity to adapt to change, and we expect the seeds planted in the new Mid-Term Plan will bear fruit at the earliest date possible.

★ In CGRA's view, the reason behind the Company's PBR=0.69 and PER=9.9 is that Mobility Operations (former Automotive Parts Operations), which handles timing chains for automotive engines, is experiencing a structural decline in demand as BEVs (Battery Electric Vehicles) spread, and that capital markets may be concerned about the risk of impairment of segment assets, which account for 32% of the Company's total assets. However, VW Europe and some of the Japanese companies such as Toyota Motor are reinforcing their activities to develop e-fuel, which synthesizes hydrogen and CO2 catalystically, and hydrogen engines, in an effort to reduce CO2 emissions while keeping internal combustion engines. The Company's focus product, Enedrive Chains, are also intended to bring a shift to "motors + chains," which has more advantages than "motors + gears" on BEVs. Depending on how these products are adopted, the discount on the Company's stock in the stock market could be reconsidered.

(Tsubakimoto Chain's consolidated earnings and stock price data: ¥100 million/yen/%)

Trading data		
Stock price (2021/8/27)	3,340	yen
52-week range	2,620-3,585	yen
Market cap	1,279	¥100 million
Number of shares issued	38,281	thousand shares
Average trading value (20-day)	2.7	¥100 million
PER (the Company's forecast)	9.9	times
PBR (as of 2021/3/31)	0.69	times
Expected dividend per share	110.00	yen
Expected dividend yield	3.3	%
ROIC (2021/3)	2.8	%

Earnings	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021 (the Company's forecast)
Net sales	1,987	2,157	2,385	2,264	1,933	2,250
Operating income	216	206	217	161	88	160
Ordinary income	220	217	216	166	110	170
Profit attributable to owners of parent	145	146	137	115	87	125
EPS	390.1	387.4	364.0	308.7	235.2	337.7
ROE	9.9	9.2	8.1	6.7	4.8	-
Dividends per share	120.00	120.00	120.00	120.00	75.00	110.00
Payout ratio	30.8	31.0	33.0	38.9	31.9	32.6
FCF	120	102	-78	60	183	-
Net cash	-3	76	-60	-85	68	-

Note: EPS and dividends per share for FY2016/FY2017/FY2018 are adjusted on a post-stock consolidation (reverse split) basis.

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(1) Tsubakimoto Chain: Three Highlights

Highlight #1: The Company announced Long-Term Vision 2030 and Mid-Term Plan 2025

The Company announced Mid-Term Plan 2025 (final year: FY2025)

On June 14, 2021, the Company announced Long-Term Vision 2030 and Mid-Term Plan 2025. The Company's earnings continued to worsen in FY2019 and FY2020 in the wake of the trade dispute between China and the US and the negative impact of COVID-19 on a global scale. However, they bottomed out on a quarterly basis in FY2020-1Q (April-June 2020) and are now in a recovery phase as automobile production and the private capital investment environment have improved. On May 11, the Company announced strong growth guidance on profit as well as on dividends for FY2021, with an operating income forecast of ¥16 billion (+80% year-on-year, operating income margin: 7.1%) and dividend per share forecast of 110 yen (75 yen in the previous fiscal year).

Meanwhile, the Company aims to achieve a new record-high profit in FY2025, the final year under the new Mid-Term Plan, with target net sales of ¥300-320 billion and target operating income margin of 9-11% (operating income of ¥27-35.2 billion, for reference) (Figure 1). Setting the new Mid-Term Plan period as a planting period, with a sense of impending crisis for what the Company strives for by 2030, the Company is poised to allocate 60% of ¥50-60 billion FCF to be created over the next five years to new business operations.

Highlight #2: Foreign competitors embark on fast-paced business restructuring

Capital markets tend to highly value the Company's capacity to adapt to change

Among the Company's competitors are BorgWarner (US), Rexnord (US), RENOLD (UK), and Diamond Chain Company (US, unlisted). BorgWarner acquired an automotive battery company, ROMEO, in 2019 and an EV motor company, Delphi Technologies, in 2020, rushing to prepare for the EV era. Rexnord also engages in the water management business through M&A deals, in which operating income margin reaches almost 23% for various valves and household plumbing equipment. As shown in Figure 2, the two companies' PER is highly valued for these fast-paced business conversions and diversification efforts. On the other hand, RENOLD, unable to break away from its existing businesses such as chains, has become insolvent, and its valuation estimate is not available for the moment. Tsubakimoto Chain stock price may have been affected by the RENOLD discount. If the Company's operating income margin comes close to 9-11% as set out in the new Mid-Term Plan, and if it can secure PER=15.0, as BorgWarner does, and ROE=8% or more (Mid-Term Plan target), its PBR could be valued as high as 1.2 (= ROE 0.08 × PER 15.0).

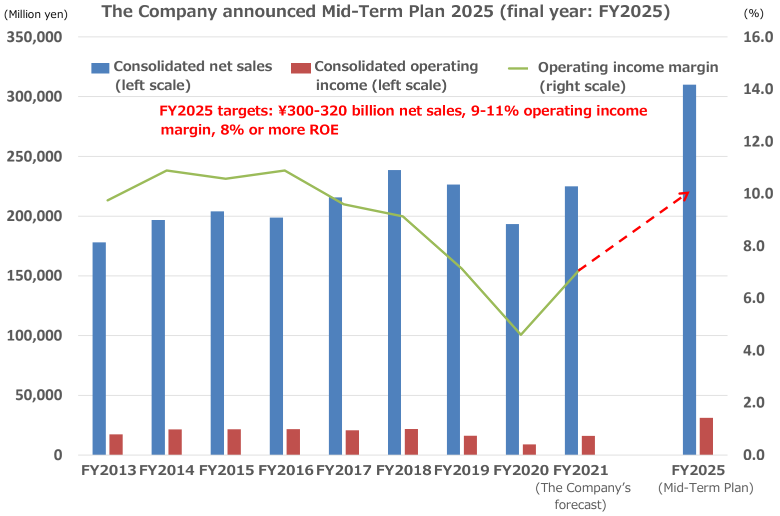
Highlight #3: The Company's PBR seems to discount excess impairment risk

We hope for the early realization of non-timing chain businesses

After dipping below 1.0 at one point when its performance weakened following the bankruptcy of Lehman Brothers (2008 global financial crisis), the Company's PBR has remained in a 1.0-1.5 range overall despite the impact of valuation discounts in the automotive parts industry, which continues to be based on a low PER structure. However, it has declined significantly since FY2018 due to concerns over decreasing demand for timing chains for internal combustion engines as a result of structural changes (electrification) in the automobile industry. As the segment assets of Mobility Operations account for 32% of total assets, current PBR (0.69) can be considered to be a level that discounts Mobility Operations' impairment risk (Figure 3).

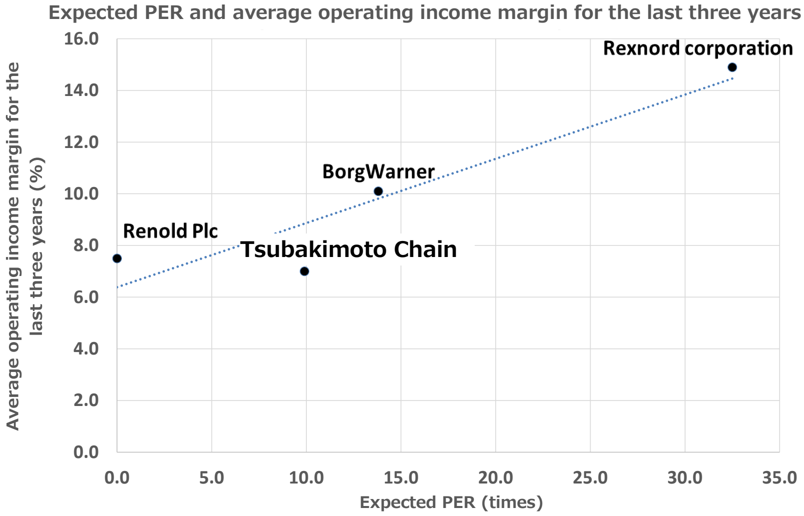
Mobility Operations is expected to maintain stable performance for the time being, and contribution to profits by the non-timing chain business should become apparent as one of the planting effects under the new Mid-Term Plan for 2030. (Particularly, Enedrive Chains may be adopted as an alternative to BEV gears.) These days, debate is heating up over existing internal combustion engines that utilize e-fuel and hydrogen engines, which are led by Toyota Motor and European automakers such as VW. Depending on measures taken by existing automakers to reduce CO2 emissions using internal combustion engines, the Company's EV (electric vehicle) risk and Mobility Operations' impairment risk, being talked about in the stock market, could be mitigated.

Figure 1: The Company announced Mid-Term Plan 2025



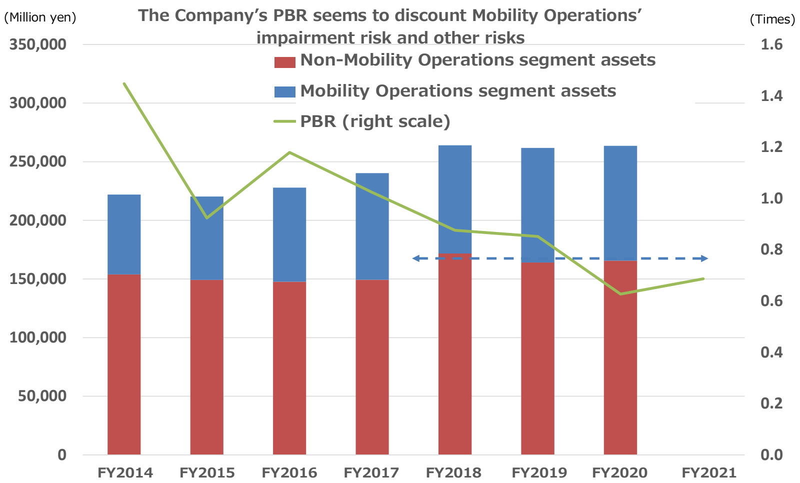
"Mid-Term Plan 2025" was announced with the Company aiming for 9-11% operating income margin for FY2025

Figure 2: Capital markets recognize the Company's capacity to adapt to change



Companies with capacity to adapt to change are highly profitable and valued

Figure 3: The Company's PBR discounts excess risk



The Company's PBR discounts Mobility Operations' impairment risk, hovering at 0.69

Source: Created by CGRA based on Company documents, etc.

(2) Operations and Business Models

・Operations

A chain is a part that transfers power and converts rotational motion to linear motion in various industrial machines, automobiles, and motorcycles. The Company is a leading manufacturer of timing chains for industrial and automotive engines. It holds the largest global market share for industrial steel chains (The Company's estimate: 16%) as well as for automotive engine timing chain systems (37%).

No.1 global market share for industrial chains and automotive timing chain systems

Currently, the Company has four business segments: (1) Chain Operations, handling approx. 20,000 kinds of power transmission and conveyance chains, (2) Motion Control (MC) Operations, supporting various equipment such as reducers, linear actuators, shaft couplings, locking devices, clutches, and modules that change, reduce, and transmit power, (3) Mobility Operations, centering on timing chain systems that are used in automotive engines to contribute to higher fuel efficiency and smaller-size engines, and (4) Materials Handling Systems Operations, handling conveyance and sorting systems and storage systems enabling automatic storage at ultralow temperature.

Since 2013, the Company has strengthened new business development activities and engaged in "eLINK" with an EV charger function, bidirectional charger/discharger function as emergency power supply in case of power outage, various software, IoT-based remote monitoring platforms, and agribusiness such as plant factory automation.

Chain, MC, and Mobility Operations are a stable source of profits

For FY2020, the Company's consolidated net sales decreased 15% year-on-year to ¥193.3 billion, and operating income decreased 45% to ¥8.8 billion (operating income margin: 4.6%). Consolidated net sales break down to: Chain (31%), Power Transmission Units and Components (present MC) (10%), Automotive Parts (present Mobility) (30%), Materials Handling Systems (28%), and other operations (1%). With regard to operating income, the Company secured ¥7.8 billion in Chain Operations (operating income margin: 12.8%), ¥3.7 billion in Automotive Parts Operations (6.4%), and ¥0.8 billion in Power Transmission Units and Components Operations (4.1%), while incurring ¥2.2 billion and ¥0.3 billion losses in Materials Handling Systems Operations and other operations, respectively, and ¥0.9 billion being eliminated upon consolidation.

The Company achieved record-high net sales of ¥238.5 billion and record-high operating income of ¥21.7 billion in FY2018. However, its highest operating income margin and ROE, 11.8% and 12.8%, respectively, were marked in FY2007.

Figure 4: Products and customer industries in major segments

Operations	Percentage of sales (%)	Main products	Main customers' industries and applications
Chains	31%	Drive chains Small-size conveyor chains Large-size conveyor chains Top chains Cable and hose carrier systems, etc.	Various manufacturing plants (Automobiles, steel mills, machine tools, LCDs, IT, beverages, foods, etc.) Mining and related Water treatment facilities, etc.
Motion Control (Former Power Transmission Units and Components)	10%	Reducers Linear actuators Shaft couplings Locking devices Clutches Modules Various controllers	Various manufacturing plants (Automobiles, steel mills, machine tools, LCDs, IT, beverages, foods, etc.) Injection molding machine Vehicle washing/inspection machines Medical equipment Agricultural machinery
Mobility (Former Automotive Parts)	30%	Timing chain systems (Roller & silent chains, tensioners, etc.) Motorized products (Enedrive Chain series) In-vehicle one-way clutches, etc.	Automotive engines (ICE, HV) 4WD vehicle transfer cases Electric vehicles (EVs) Motorcycle starters, etc.
Materials Handling Systems	28%	Logistics industry systems Life science field systems Newspaper printing factory systems Automotive industry systems Bulk handling systems Metalworking chips handling/coolant processing systems Other conveyance/sorting/storage systems Maintenance, etc.	Distribution warehouses/centers Pharmaceutical and cell research Paper mills/newspaper printing factories Automotive manufacturing plants Biomass power plants Processing plants using machine tools Other manufacturing plants
Other	1%	Agribusiness Monitoring business, etc.	Plant factories Various plants

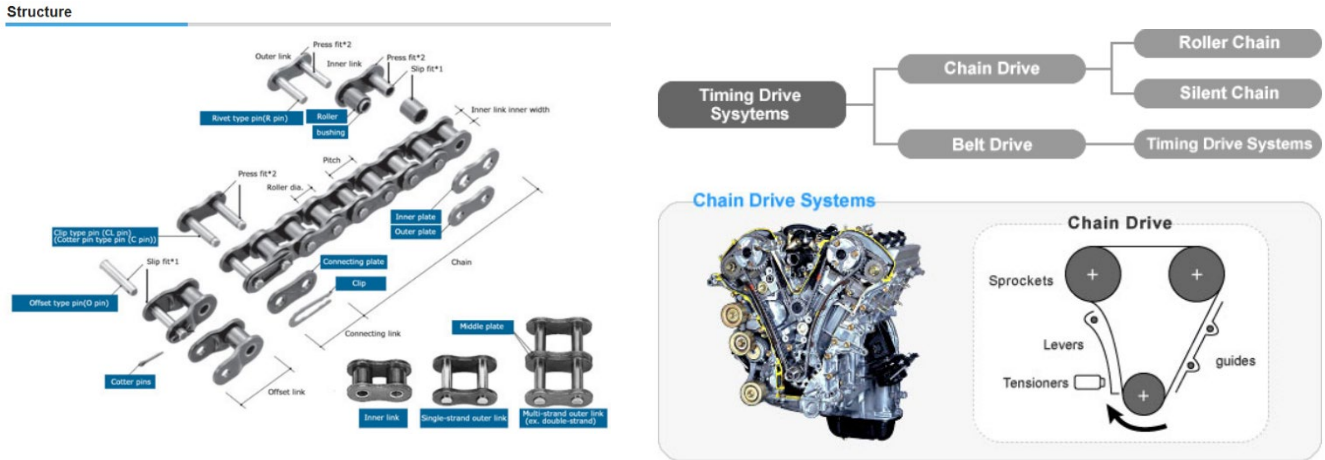
Source: Created by CGRA based on Company documents, etc. Percentage of sales: FY2020 actual results

・Core Products

The Company's No.1 global share comes from high reliability

The Company's chains, its original primary business, have unparalleled wear resistance (wear life) and the world's top level of power transmission capability, with a product lineup including environmentally resistant chains and lube-free chains. A chain mechanism is simple, but the Company secures a 16% global share (ranked 1st) thanks to its products' high performance/reliability and extensive lineup. With a 37% global share (ranked 1st) for timing chain systems for automotive engines, the Company supplies mainly chains, as well as tensioners, lever guides, and sprockets to automakers.

Figure 5: Mechanism of roller chain/timing chain systems

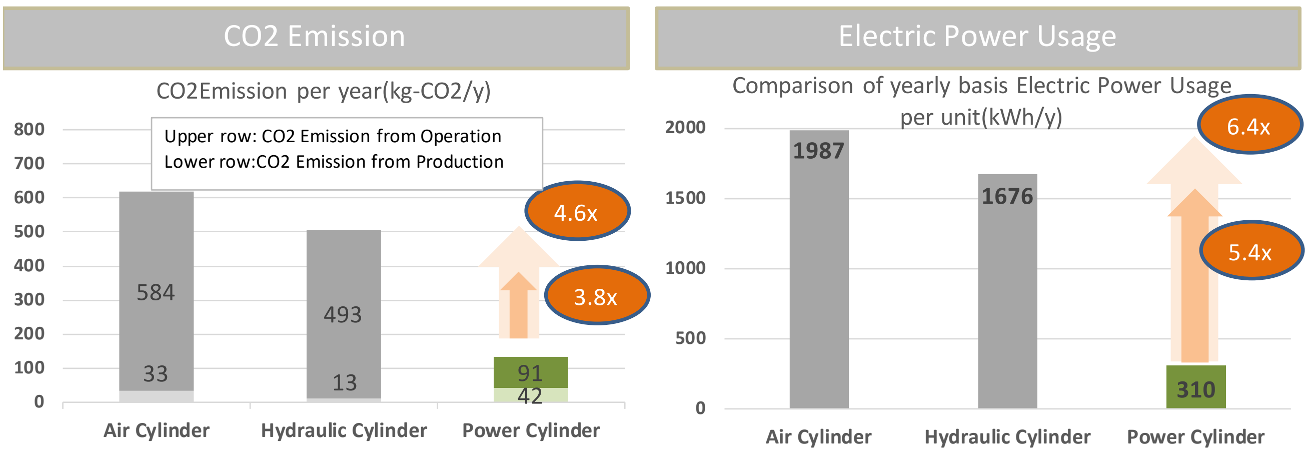


Source: Company website

Electric cylinders have higher energy-saving and environmental characteristics compared to hydraulic or pneumatic cylinders.

Electric cylinders account for about 20% of MC Operations' net sales and help the Company hold a 76% market share in Japan (ranked 1st). The Company's electric cylinders (product name: Power Cylinder) are compact and easy to install and handle because they are not based on hydraulic or air pressure. As shown in Figure 6, they are superior to hydraulic or pneumatic cylinders in terms of (extremely low) CO2 emissions and power consumption. MC Operations also has many other products with a top domestic market share, such as locking devices (product name: Power-Lock, 56% share), worm reducers (36%), and cam clutches (90%). MC Operations can be said to be a hidden FA/motor-related business (est. 30% of consolidated net sales).

Figure 6: Power Cylinder's competitive edge



Source: Company website

・Business Models and 6 Types of Operating Capital

Typical economically sensitive company but resistant to recessions

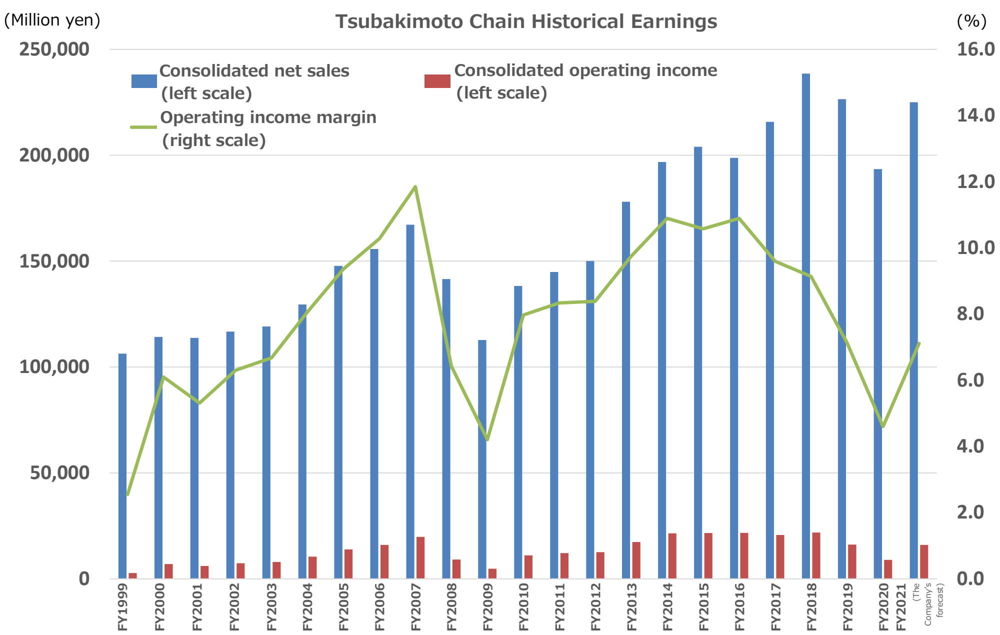
An estimated 30% of consolidated net sales tend to be linked to demand for various industrial motors

Demand in the three operations of Chain, MC, and Materials Handling Systems (which collectively account for 69% of total sales) is influenced by private capital investment. However, due to their aspects of consumables, Chain and MC are linked to industrial production and US ISM index, which makes them relatively resistant to recessions. Not only MC product lines but also power transmission chains and sprockets are often used incidentally with industrial motors, and an estimated 30% of sales are FA/motor-related products. Mobility Operations (30%) is linked to global vehicle production but tends to outperform it thanks to newly acquired projects.

Looking back on past business results, operating income fell from the ¥19.8 billion recorded in FY2007 to ¥4.7 billion in FY2009 (operating income margin: 4.2%) after the bankruptcy of Lehman Brothers, yet an operating surplus was secured. Even when the negative impact of COVID-19 was seen on the Company's operating income for FY2020, a surplus of ¥8.8 billion was achieved (operating income margin: 4.6%). This indicates that the Company has become increasingly resistant to recessions as its profit levels tend to rise during recessions.

The Company's business model is based on industrial chains for power transmission and conveyance, selling various equipment such as reducers, shaft couplings, and locking devices, as well as parts and units such as timing chains for automotive engines, and diversifying into the materials handling business of system products. In response to changing customer needs, the Company will vertically expand its operations by increasing the added value of products and composite products and strengthening its capability to propose solutions.

Figure 7: Tsubakimoto Chain is resistant to recessions



Source: Created by CGRA based on Company documents, etc.

Key points about 6 types of operating capital

In terms of the production aspect as the Company's **manufacturing capital**, the mother plants are the Kyotanabe Plant for Chain Operations, the Nagaokakyo Plant for MC Operations, and the Saitama Plant for Mobility Operations. Capital investment was ¥8.2 billion in FY2020 (4.3% of net sales), and depreciation was ¥12.6 billion (6.6% of net sales). The Company made proactive capital investment with the aim of achieving ¥100 billion in sales in Mobility Operations, and capital investment reached ¥18.1 billion for FY2017 (8.4% of net sales). Capital investment has since normalized, but depreciation has remained high. With 81 affiliates in 26 countries and regions, the Company's overseas sales ratio was 57% for FY2020.

As **intellectual capital**, R&D expenses were ¥4.2 billion or 2.2% of net sales for FY2020 (average annual R&D expenses for the last five years: ¥4.4 billion or 2.1% of net sales). The Company has approximately 400 R&D staff groupwide (about 5% of consolidated employees), who are engaged in the development of products that differentiate from other companies' products and meet customer needs.

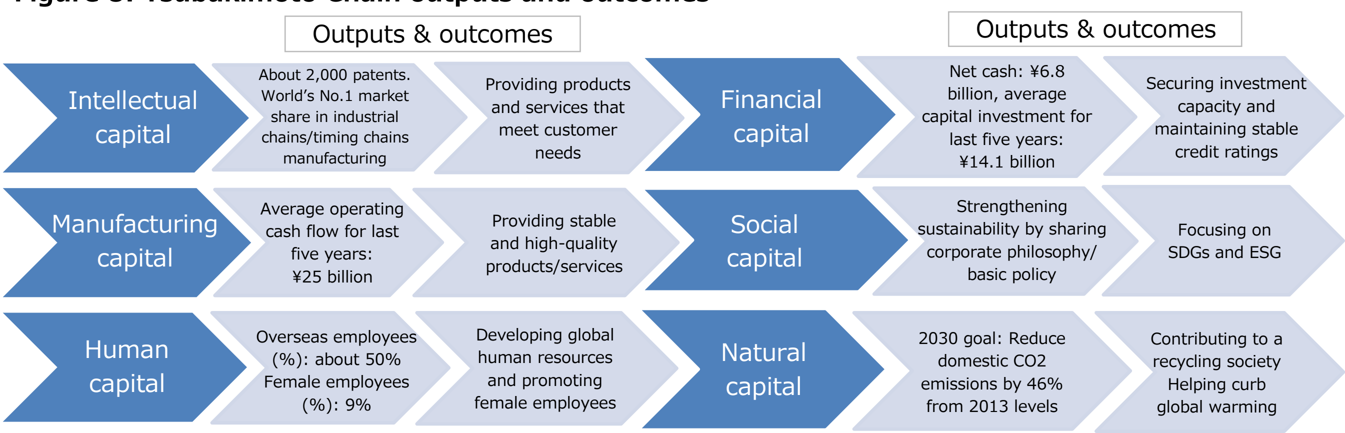
As **human capital**, the Company had 8,535 employees on a consolidated basis as of the end of FY2020 (+956 over the last five years). Based on a merit system by function/role, the Company is promoting personnel system reforms, with a keyword being "diversity," and is committed to global human development by establishing an "overseas trainee program." About 50% of the Company's consolidated workforce are foreign nationals, helped in part by the acquisition of US CCC (Central Conveyor Company). Further, the Company is committed to increasing the percentage of female employees and their promotion to managerial positions. "Tsubaki Techno School" was opened to train young engineers and raise the level of their skills. The Company's net sales per employee of ¥22 million for FY2020 was relatively low compared to NSK's ¥25 million, Yaskawa Electric's ¥30 million, and Daifuku's ¥40 million.

As **financial capital**, total assets were ¥307.3 billion (interest-bearing debt: ¥41.1 billion, net cash: ¥6.8 billion), while shareholders' equity was ¥185.7 billion with 60.5% equity ratio for FY2020. As financial capital-based outputs, the Company has a profit structure that generated in FY2020 consolidated net sales of ¥193.3 billion, operating income of ¥8.8 billion (operating income margin: 4.6%, equivalent to 41% of record-high operating income ¥21.7 billion marked in FY2018), ROE of 4.8%, operating CF of ¥27.8 billion (average for the last five years: ¥25 billion), and free CF of ¥18.3 billion (average for the last five years: ¥7.7 billion).

As **social capital**, the Company seeks to turn its corporate activities based on "advancing the 'art of moving' and surpassing society's expectations" as set out in its corporate philosophy, "TSUBAKI SPIRIT," into the realization of a sustainable society, and enhance its corporate value through technological innovation, and contribution to SDGs.

As **natural capital**, the Company already developed the "Group Basic Environmental Policy" in 2000, having been committed to manufacturing and supplying eco-friendly products from a medium and long-term perspective in an effort to contribute to the realization of a sustainable society. In order to achieve the long-term environmental targets by 2030, environmental accounting has been introduced at production sites, with various KPIs set for environmental impact reduction. At the same time, the Company indirectly contributes to global environmental conservation by developing and supplying products that take into account CO2 reduction from the perspective of the product life cycle, and by actively supplying products to the SDGs market. Specifically, the Company authorized about 17% of FY2020 consolidated net sales or about ¥32 billion (a total of 254 products) as eco-products (SDG-oriented products) to expand sales. (Note: Applicable only to domestic production in Japan. Overseas production is excluded.)

Figure 8: Tsubakimoto Chain outputs and outcomes



Source: Created by CGRA based on Company documents, etc.

・Company History

Mobility Operations are faced with challenges for the second time

New risks and opportunities for exponential growth both seen in Mobility Operations

In 1917 amidst World War I, Setsuzo Tsubakimoto, the Company's founder, began manufacturing bicycle chains. That was the Company's beginning. With a catalog of foreign chains as inspiration, the Company began manufacturing industrial machine chains in 1923, ceased bicycle chain production, and switched to machine chain production in 1928. In 1937, the Company delivered a large-scale conveyor plant incorporated with Company chains for the first time and launched the conveyor (present Materials Handling Systems) business. In 1957, the Company started manufacturing timing chains for automotive engines, and entered the automotive parts (present Mobility) business. In 1958, the Company developed a large chain reducer, and launched the power transmission units and components (present MC) business. Since 2013, the Company also focused on developing new businesses. In the first half of the 1980s, the Company was faced with a structural problem, that timing chains for automotive engines were being replaced by rubber belts, and then around 1995 a countertrend (revival of chains) gained momentum. Currently, a new automotive industry trend, "CASE" (Connectivity, Autonomous, Shared, and Electric) has emerged as a new challenge.

Figure 9: Company history and major events (by segment)

	Tsubakimoto Chain	Chains	Motion Control	Mobility	Materials Handling Systems	New Business
1917	Founded in Oyodo-ku (present Kita-ku), Osaka					
1928		**Shifted to industrial chain production**				
1931	Became a designated naval factory					
1937					**Entered the materials handling business**	
1938		Construction of Tsurumi Plant in Osaka City completed				
1949	Listed on OSE and TSE	Marine roller chains approved by the Lloyd's Register				
1951		Exported roller chains to the US for the first time				
1953		Became a JIS certified plant				
1957				**Started production of timing chains**		
1958			**Developed a large chain reducer**			
1961					Supplied overhead traveling conveyors to automobile factories	
1962					Completed construction of the Saitama Plant	
1965			Established a joint venture with BorgWarner			
1966				Completed construction of an automotive parts factory within the Saitama Plant		
1966			Released small-size gear motors			
1967			Released Power Cylinders			
1970		Established first overseas base in Taiwan				
1971		Established a sales company in the US	Completed construction of the Kyoto Plant (present the Nagaokakyo Plant)			
1972	Established subsidiaries in the Netherlands, Canada, and other countries					
1976		Achieved the highest quality RS roller chains in the world				
Late 1970s					Supplied multiple advanced FA systems	
1980				Started supply of timing belts		
1982					Completed construction of the Hyogo Plant	
1984				**A shift from chains to belts advanced**		
1985					Released linear actuators	
1986		Started local production in North America				
1986		Started in-house production of plastic chains				
1989				Started production of timing chains in North America		
1992			Construction of Okayama Plant completed		Released a high-speed automatic sorting machine "LiniSort"	
1993			Released hypoid motors			
Around 1995				**A return from belts to chains advanced**	Amazon began operations	
1996					Released paper-feeding AGVs	
1998			Released LiniPower Jacks			
1998				Released silent chains		
2000	Formulated Group Basic Environmental Policy					
2001		Completed construction of the Kyotanabe Plant				
2002			Spun off Precision Machinery Business Unit		Released life science support equipment "LaboStocker" series	
2003	Formulated Group Basic Risk Management Policy		(Established Tsubakimoto Emerson)	Tesla Motors (US) began operations		
2004	Introduced a corporate executive officer system					
2006		Acquired Yamakyu Chain Co.	Released starter clutches for motorcycles	Released PD chains for 4WD vehicles		
2007					Achieved record-high operating income in FY2007	
2008			Developed and released zip chain lifters			
2009				Created Auto Engineering Laboratory		
2010		Acquired Kabelschlepp (Germany)				
2011			Released Lift Master	Commercialized environmentally friendly Zerotech series		New businesses
2012		Established a manufacturing subsidiary in China			Acquired Mayfran Holdings (US)	
2013			Made Tsubakimoto Emerson wholly-owned subsidiary			Released an EV charging system "eLINK"
2014	Formulated "Long-Term Vision 2020"		(Renamed to Tsubaki E&M)		Completed construction of a plant in Indonesia	Entered the agribusiness in full scale
2016		Released the 100th anniversary model "G8" series		Marked new record-high operating income in FY2016		Released IoT-based remote monitoring software
2017	Formulated "Tsubaki Spirit" to mark the Company's centennial		Merged Tsubaki E&M	Established a "12 plants in 8 countries" system		
2018	Marked new record-high operating income in FY2018	Marked new record-high operating income in FY2018	Marked new record-high operating income in FY2018	**CASE automotive debate gained momentum**	Acquired Central Conveyor Company (US)	
2019	Completely separated strategy formulation/supervision and business execution (functions)					
2020	Formulated Group Basic Sustainability Policy					

Source: Created by CGRA based on Company documents, etc.

(3) Mid-Term Plan and SWOT & Five Forces Analyses

Announcement of Long-Term Vision 2030 and Mid-Term Plan 2025

On June 14, 2021, the Company announced Long-Term Vision 2030 and a new 5-year "Mid-Term Plan 2025" (FY2021-FY2025).

Describing what the Company strives for by 2030 as "aiming to become a corporate group that contributes to solving social issues through Linked Automation technology, the Company presented the following three themes as its social issues to address: "creating a people-friendly society," "building a safe and secure living infrastructure," and "creating an Earth-friendly society."

The Mid-Term Plan basic policy is to "strengthen the profitability of existing business fields and use the next five years to plant seeds for new business fields that will lead to sustainable growth toward realizing Long-Term Vision 2030." The numerical targets are as shown in Figure 10. As a capital efficiency KPI, the target ROE of 8% or more is clearly stated for the first time.

<Specific policies>

(1) Create next-generation businesses that will enable sustainable growth: Enter new business fields that address social issues, and create and develop new products and technologies
(2) Further establish market position and strengthen profitability of existing businesses: Maintain and strengthen competitive advantage of leading global/niche products, and expand sales by improving price competitiveness
(3) Strengthen business foundation through manufacturing reforms and enhanced human resource development
(4) Strengthen ESG initiatives: Reduce total CO_2 emissions (E), enhance social value through products (S), and strengthen governance and business infrastructure (G)

<Create next-generation businesses that will enable sustainable growth (specific measures)>

(1) Human assist: Develop and provide automated and labor-saving equipment for general consumers, such as for the medical welfare and agriculture sectors
(2) Maintenance: Strengthen maintenance services, and enhance and expand "service sales" business
(3) Agribusiness: Propose automated/smart agriculture for agriculture businesses such as plant factories
(4) Life science: Participate in the field of regenerative medicine, and manufacture and sell automated equipment for cell culture processes
(5) Energy infrastructure: Enter the EV charging infrastructure market, and propose a system linking V2X charging/discharging equipment, solar power generation, and storage batteries
(6) Mobility: Strengthen the mobility parts business, such as clutches and Enedrive Chains for EVs, and various driving parts
(7) New business search: Create a new independent and dedicated department to continuously generate seeds for new businesses
(8) Strengthen profitability: Enhance competitiveness and utilize human resources by linking market information with manufacturing
(9) Manufacturing DX: Manufacturing DX Reform (visualization of production, AI-based data analysis, etc.)

Figure 10: Mid-Term Plan 2025 numerical targets

Objective	KPI	FY2025
Profitability	Net sales	JPY 300–320 billion
	Operating income ratio	9–11%
Capital efficiency	ROE	8% or more
Shareholder returns	Dividend payout ratio	Based on 30%
ESG	Reduction of CO_2 emissions	Down 30% from FY2013 (target: domestic group companies) Down 20% or more from FY2018 (target: overseas group companies)

Source: The Company's briefing materials on Long-Term Vision 2030 and Mid-Term Plan 2025

Business Segments	FY2020 Results		FY2025 Targets	
	Net sales (JPY 100 million)	Operating income ratio (%)	Net sales (JPY 100 million)	Operating income ratio (%)
Chain	613	12.8%	800~850	15% or more
Motion Control	196	4.1%	320~350	12% or more
Mobility	577	6.4%	950~1,000	11% or more
Materials Handling Systems	536	△4.1%	900~950	6% or more

* Excluding expenses related to other operations groups and new business development

・CGRA Focus in Mid-Term Plan 2025

Proactively plant seeds for new growth over the next five years

Long-Term Vision 2030 and Mid-Term Plan 2025 announced this time cover the following four key points:

(1) With SDGs at the forefront, the Company will "aim to become a corporate group that contributes to solving social issues through Linked Automation technology" (What Tsubaki Strives for by 2030).

(2) In the next five years, the Company will "expand the scale of existing businesses through innovative methods including M&A transactions, as well as pursuing their growth. In addition, the next five years will be used to plant seeds for new growth to achieve sales of ¥500 billion in 2030. The Company will expand its business fields through new technology development, M&A, forming alliances, etc."

(3) This time, a new target ROE (8% or more) is set as a KPI. Financial analysis will be dealt with later, but a relatively large room for improvement in the Company's B/S is seen. The Company's corporate value can be expected to increase if profitability and capital efficiency are improved with management indicators broken down to the department level.

(4) For the next five years, the Company projects to generate ¥50-60 billion cumulative FCF, invest ¥30-36 billion in new business development, and distribute ¥20-24 billion dividends (DPS: 110-130 yen) based on a 30% payout ratio. For strategic growth investment, the Company will also consider raising funds from external sources.

In CGRA's view, taking growth opportunities or transforming businesses through M&A transactions is effective as exemplified by the Company's competitors BorgWarner (US) and Rexnord (US), but that must come with the disclosure of quantitative risks and countermeasures as presented by Mitsubishi Chemical in its "KAITEKI Report," as well as TCFD scenario analysis and the execution of systematic ESG management.

Figure 11: Mid-Term Plan 2025 financial strategy

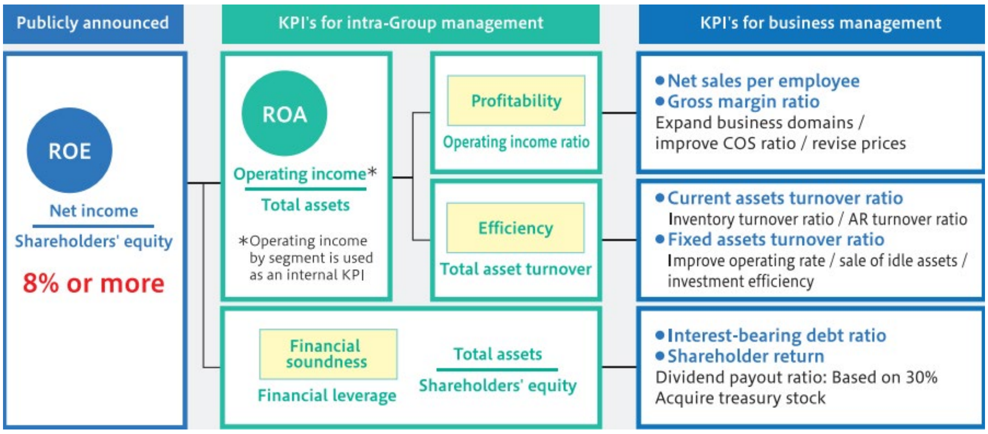
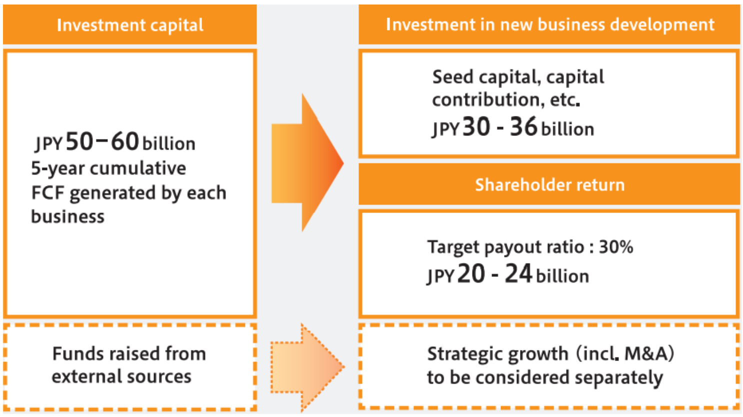


Figure 12: Allocation of funds for next five years



Source: Briefing materials on the Company's Mid-Term Plan 2025

·SWOT & Five Forces Analysis

Demonstrating the strengths of the component manufacturer with a high market share

The following SWOT and five forces analysis of the Company was put together by taking into account its characteristics, external environment, and domestic/international competitors. Figure 13 below displays the Company's **Strengths, Weaknesses, Opportunities, and Threats**. As far as the valuation of the Company's stock price goes, capital markets seem to view the Company's explanations on measures to deal with its weaknesses and risks as inadequate. As for its strengths, the Company's presentation (explanations) to the public on its high market share and technological edge in Chain and MC Operations seems to be inadequate as well.

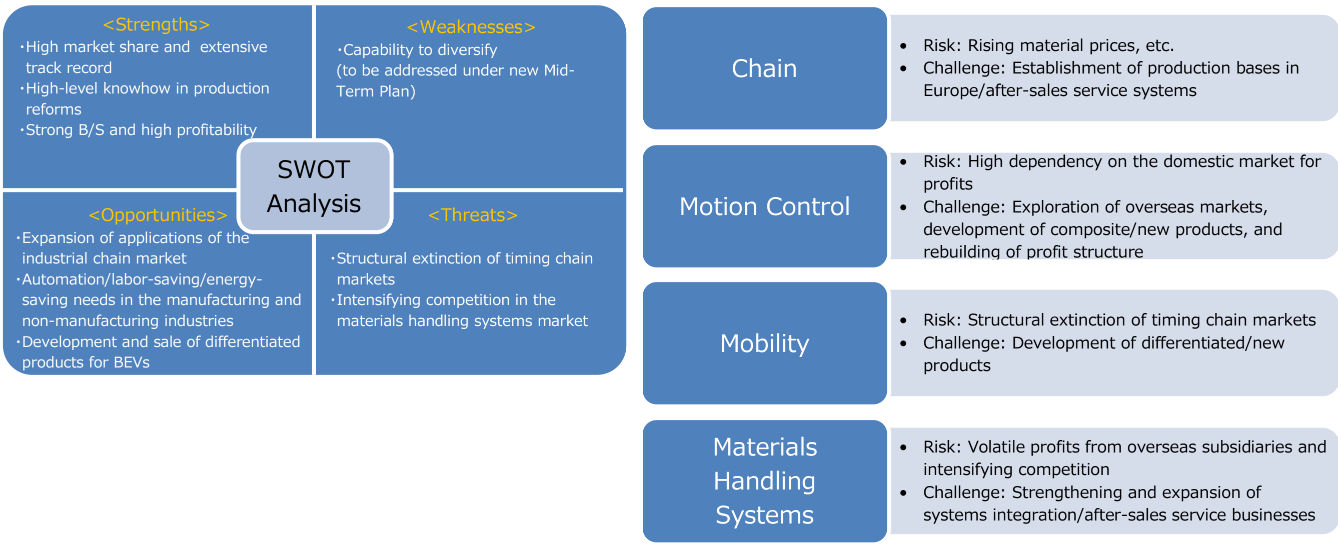
Extended explanation about MC Operations' competitive edge, etc., for capital markets is awaited

Price competition risk likely to be low

Although the five forces analysis is similar to the SWOT analysis, the former is more effective in understanding the position of buyers and sellers in the industry, including their bargaining power.

Competition within the industry: Although the competitive environment appears to have eased relatively for Chain Operations, it is still intense for MC and Mobility Operations. Materials Handling Systems Operations, despite its severe competitive environment, carries out a strategy specializing in offering solutions mainly with core products. **Threat of newcomers**: Nothing in particular to be noted. **Threat of substitutes (alternative products)**: Electric vehicles (EVs) that do not require internal combustion engines is a structural problem to the Company's timing chains, but even EVs without internal combustion engines could help sustain demand for chains if "motors + gears" shifts to "motors + chains." There are no substitutes for industrial chains. **Sellers' bargaining power**: Rising cost of various steel materials is a risk and already discounted in the Company's earnings forecasts for FY2021. In the past, however, the Company actually raised the prices of its products. **Buyers' bargaining power**: In the automobile industry, the Company normally incurs a risk of lower selling prices. However, in the industrial machinery industry, the Company has raised the prices of products. The Company seems to have strong bargaining power over buyers using its high market share and productivity improvement measures as a weapon.

Figure 13: Tsubakimoto Chain SWOT & Risk/Challenge Analysis



Source: Created by CGRA

(4) Earnings Outlook and Segment Trends

・Past Results and FY2021 Earnings Forecasts

Past sales trend: Capability to create demand is increasing

As Company-specific factors, decreasing depreciation and improvement of CCC's profitability can be expected

Following the bankruptcy of Lehman Brothers, consolidated net sales dropped to ¥112.7 billion in FY2009 before doubling (x2.1) over the next nine years. In addition, net sales for FY2020 fell 19% from the most recent peak in FY2018 to ¥193.3 billion. After the bankruptcy of Lehman Brothers, net sales sank 33% from the FY2007 peak, which indicates that the Company's capability to create demand (= resistance to recessions) has increased compared to the past. Consolidated operating income reached a record high of ¥21.7 billion (operating income margin: 9.1%) in FY2018, expanding 4.6-fold in nine years from the bottom of ¥4.7 billion recorded in FY2009 after the bankruptcy of Lehman Brothers (the Company's stock price surged nearly 5.6-fold over the same period). Operating income for FY2009 following the bankruptcy of Lehman Brothers fell 76% to ¥4.7 billion from the peak operating income of ¥19.8 billion for FY2007, whereas operating income for FY2020 decreased only about 59% to ¥8.8 billion from the latest peak of FY2018.

The recent slowdown in operating income margin is partly due to heavy burden of fixed costs

On the other hand, the Company marked a record-high operating income margin of 11.8% in FY2007, but it dropped to 9.1% in FY2018 when record-high operating income was posted. The main factors are: (1) the burden of fixed costs associated with proactive capital investment, particularly in Mobility Operations, was heavy, and (2) Materials Handling Systems Operations' operating income margin was 11.9% in FY2007 (cf. Daifuku's was 8.9%). Now that depreciation reached a peak in FY2019 and Materials Handling System's profitability is expected to improve, the margin should pick up going forward.

The Company's FY2021 earnings forecasts seem conservative

FY2021 earnings forecasts and expected dividend per share both seem conservative

For FY2021, the Company forecasts net sales of ¥225 billion (+16% year-on-year), operating income of ¥16 billion (+80%, operating income margin: 7.1%), and net income of ¥12.5 billion (+44%, EPS: 337.7 yen). Dividend per share is expected to increase 35 yen year-on-year to 110 yen (payout ratio: 32.6%). Seemingly, the Company forecasts significant increases in earnings, but sales and operating income are both at the same levels as they were two years ago in FY2019. Most of the automakers, including Toyota Motor, automotive parts makers, and bearing makers, project their FY2021 earnings to surpass FY2019 levels. In addition, the Company's expected dividend per share is 110 yen (payout ratio: 32.6%), which is lower than actual dividend paid for FY2019, 120 yen (payout ratio: 38.9%, initially projected at 30.0%). In CGRA's view, not only earnings forecasts but also expected dividend per share is still relatively conservative.

Figure 14: Consolidated orders/net sales/operating income

Source: Created by CGRA based on Company documents, etc.

・Market Overview and Earnings Outlook for Chain Operations

As consumables, stable demand creation can be expected

For industrial chains, there is a demand for them to be installed in new facilities or equipment and demand for them to be delivered as consumables (replacement parts) for existing facilities and equipment. For this reason, the demand for chains tends to be linked to industrial production, and it sometimes increases more than expected due to the stock building effect by distributors when capital investment demand, such as machine tools orders, surges. Figure 15 shows Chain Operations' net sales and combined orders for machine tools (based on the Japan Machine Tool Builders' Association data) and transportation machinery (based on the Japan Society of Industrial Machinery Manufacturers data), on an annual basis. With the aspect of consumables, Chain Operations orders are obviously less volatile compared to combined orders. The new Mid-Term Plan also sets out "strengthening the after-sales service business," which should stabilize the Company's net sales further.

The Company's stable profit center with a consumable aspect

Demand for chains is expected to grow steadily partly due to expanded applications

In CGRA's view, global demand for industrial chains can grow at a 3-5% annual rate on the back of: (1) global population growth, improved living standards in countries, and GDP growth; (2) expansion of use of lube-free chains, environmentally resistant chains, and zip chains; and (3) increasing labor-saving and automation needs in manufacturing and non-manufacturing industries.

The Company's most profitable segment in the last three years

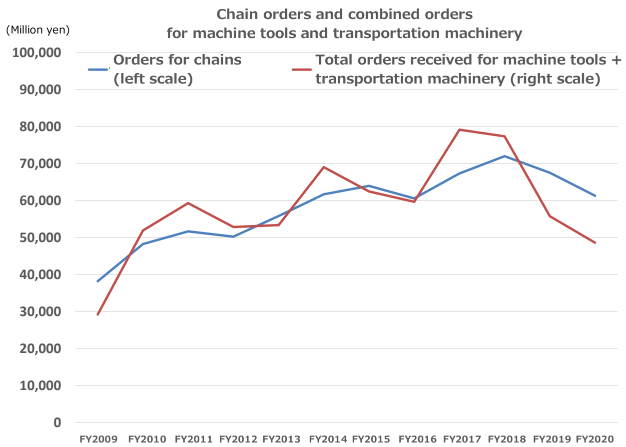
For FY2020, Chain Operations' net sales were ¥61.3 billion (-9% year-on-year) or about 31% of consolidated sales, while operating income was about ¥7.8 billion (-7% year-on-year, operating income margin: 12.8%) or 88% of consolidated operating income. Mobility Operations used to account for more than half of the Company's consolidated operating income, but in recent years, Chain Operations has become the Company's main source of earnings, helped by increases in the number of new customers, market share, and productivity improvement effects.

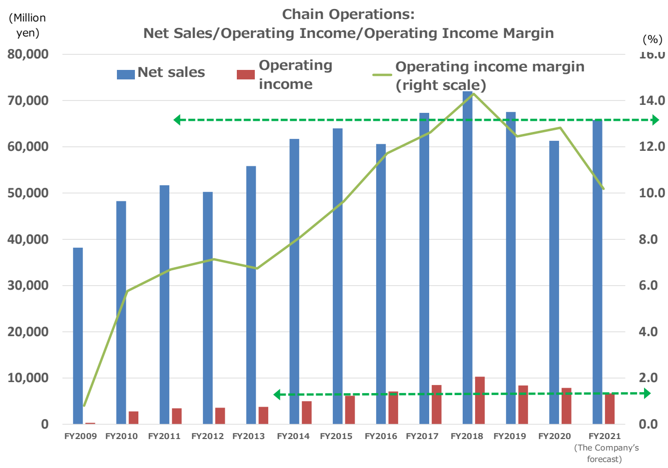
Lower earnings projections for FY2021, but appears conservative

The Company's FY2021 projections for Chain Operations are: Net sales of ¥65.8 billion or +7% year-on-year (1H: ¥33 billion, 2H: ¥32.8 billion), operating income of ¥6.7 billion or -15% year-on-year (1H: ¥3.5 billion, 2H: ¥3.2 billion), and operating income margin of 10.2%. Net sales are projected to be slightly lower than the ¥67.5 billion recorded in FY2019, while operating income is projected to be significantly lower than the ¥8.4 billion recorded in FY2019 (operating income margin: 12.4%). CGRA attributes the Company's conservative projections to such things as (1) normalization of selling, general and administrative expenses and personnel expenses, which were squeezed amid the COVID-19 pandemic, (2) rising prices of various materials, and (3) dwindling demand from the United States, which is a highly profitable market.

With various risks taken into account, the Company's FY2021 projections seem conservative

Figure 15: Chain Operations orders and earnings





Source: Created by CGRA based on various materials, etc.

・Market Overview and Earnings Outlook for Motion Control Operations

High dependency on capital investment increases volatility slightly

MC Operations (former Power Transmission Unit and Components) handles products installed in the moving/driving parts of various machines, such as reducers, electric cylinders, shaft couplings, and locking devices, and products used incidentally with industrial robots or industrial motors installed in various machines. Therefore, a higher percentage of products are delivered as parts to be installed in new facilities/equipment compared to industrial chains, which make orders for these more volatile than chains. Figure 16 shows MC Operations orders and Yaskawa Electric's combined orders in the motion business (servo motors + inverters) and the robot business, on a quarterly basis. Clearly, they are highly linked, although MC Operations lags behind Yaskawa.

With most of its products used with industrial motors, MC's leading indicator is Yaskawa's motion + robot business orders

Global MC related demand is expected to grow at a 7% annual rate

CGRA predicts that global demand in MC Operations can grow at an around 7% annual rate, while showing cyclical growth linked to macroeconomic trends, as with Chain Operations. The growth rate of the Company's MC Operations, however, has been lower than the global market's as its domestic sales ratio (FY2020: 76%) and unit-sales ratio are both high. Going forward, overseas operations and the development and sales of smart motion units (new composite products) seem to hold the key to growth.

Recent decline in operating income margin also implies a Company-specific and temporary aspect

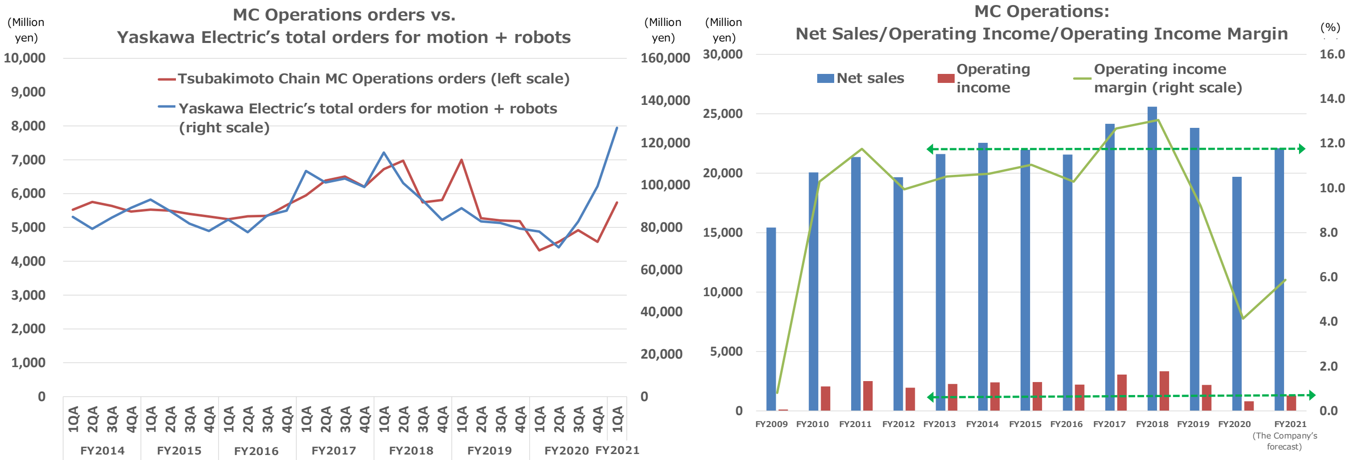
MC Operations' operating income margin dropped to 4.1% in FY2020 (FY2019: 9.2%, FY2018: 13.1%). Temporary factors unique to the Company include: (1) some products were preemptively discontinued in the process of product restructuring; (2) heavy burden created by increasing number of development personnel and depreciation due to capital investment in the process of strengthening manufacturing; and (3) the launch of new products to be released into markets was delayed.

Keep a close eye on how much operating income margin improves in FY2021

The Company's FY2021 projections for MC Operations are: Net sales of ¥22.1 billion or +12% year-on-year (1H: ¥10.7 billion, 2H: ¥11.4 billion), operating income of ¥1.3 billion or +59% year-on-year (1H: ¥0.4 billion, 2H: ¥0.9 billion), and operating income margin of 5.9% (1H: 3.7%, 2H: 7.9%). Also, AP Clutch (net sales: About ¥2.0 billion) was transferred from MC Operations to Mobility Operations in FY2021. Including the portion of AP Clutch transferred, sales are projected to be around the ¥23.8 billion level recorded in FY2019, while operating income is projected to be lower than the ¥2.1 billion recorded in the same year (operating income margin: 9.2%).

Development of specific new products and disclosure of more information are awaited

Figure 16: Lagging behind Yaskawa Electric's motion + robot orders



Source: Created by CGRA based on various materials, etc.

・Market Overview and Earnings Outlook for Mobility Operations

Operating income margin surged close to 20% at one point...

Aiming for stable operating income margin of 10% or more toward 2025

Mobility Operations (former Automotive Parts) saw rapid growth in the trend of downsizing (= timing chains are optimized for smaller-size engines) for better fuel economy for automobiles, and record-high net sales of ¥79.5 billion were posted in FY2017 (1.6-fold in the last five years). Record-high operating income of ¥12.3 billion was posted in FY2016, with an operating income margin of 16.5% (cf. record-high operating income margin: 17.8% in FY2014). As a result of proactive investments made since FY2015 with the aim of achieving ¥100 billion sales, the Company saw increases in depreciation and fixed costs due to a growing number of employees, and a subsequent gradual decline in operating income margin.

For FY2020, Mobility Operations recorded net sales of ¥57.7 billion (-19% year-on-year) and operating income of ¥3.7 billion (-36% year-on-year, operating income margin: 6.4%), but in FY2020-4Q (January-March 2021) operating income showed a 47% year-on-year increase to ¥2.0 billion and operating income margin recovered to 11.8%. In FY2021-1Q (April-June 2021), operating income was ¥2.1 billion (operating income margin: 12.6%), which indicates its recovery trend is intensifying.

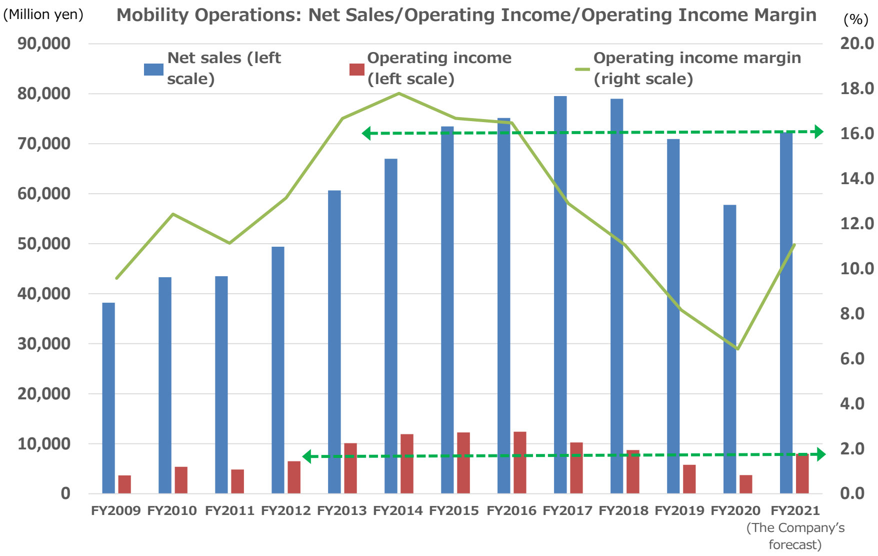
Operating income margin likely to stay above 10% by around 2025

Operating income margin already at 12.6% in April-June 2021

Capital investment in Mobility Operations increased to ¥12.0 billion in FY2017, then decreased to ¥3.3 billion in FY2020 upon the completion of the "12 plants in 8 countries" system. Depreciation has also been on a gradual decline, after reaching a peak at around ¥6.9 billion in FY2019. CGRA thus believes that keeping operating income margin stable at 10% or more is feasible, given further improvements in production efficiency and a decrease in fixed costs.

The Company's FY2021 projections for Mobility Operations are: Net sales of ¥72.3 billion or +25% year-on-year (1H: ¥36 billion, 2H: ¥36.3 billion), operating income of ¥8.0 billion or +115% year-on-year (1H: ¥3.8 billion, 2H: ¥4.2 billion), and an operating income margin of 11.1%. Sales are expected to be slightly stronger than the ¥70.9 billion recorded in FY2019, but more or less the same after the transfer of AP Clutch is considered. Operating income is expected to be stronger than the ¥5.8 billion recorded in FY2019 (operating income margin: 8.2%). With operating income margin already above 12% in the most recent quarter, the Company's projections should be achieved.

Figure 17: Mobility Operations net sales/operating income/operating income margin



Source: Created by CGRA based on Company documents, etc.

The Company's Mobility Operations growing faster than global vehicle production

Sales of Mobility Operations showed rapid growth in the wake of a trend of downsizing engines for better fuel economy for automobiles, growing at a significantly faster pace than global vehicle production thanks to a shift from rubber timing belts to steel timing chains and capture of market share (Figure 18).

Mobility Operations' target customers, the ICE (Internal Combustion Engine) & HV (Hybrid Vehicle) markets, are expected to remain steady until around 2025 at the earliest, according to automakers' plans for the launch of new engines. With the Company's global market share expected to continue to grow, Mobility Operations should be able to maintain sales growth that exceeds global vehicle production. In addition, as a shift to HVs does not involve any significant change in engine chain mechanisms, apparently there is no particular downward trend, just because of HVs, seen in unit prices.

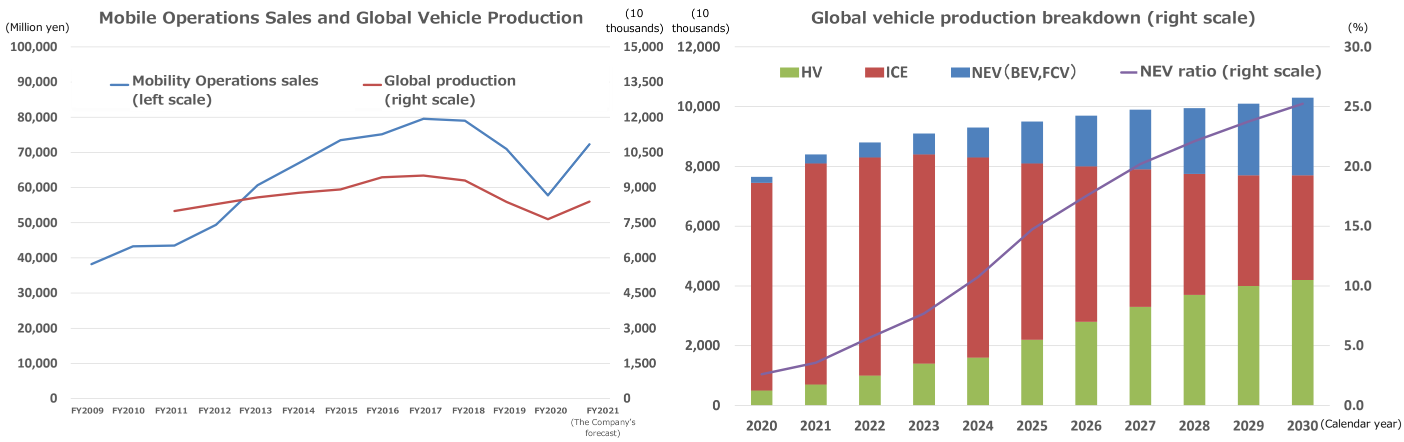
EV trend (automotive electrification) likely to become noticeable/visible after 2025

Final year (FY2025) target under Mid-Term Plan: ¥100 billion net sales

In the new Mid-Term Plan, the Company discloses its projected vehicle production and Mobility Operations sales by 2025. It projects net sales of ¥72.3 billion for FY2021, mainly driven by growth in the existing business areas with environment-friendly products for next-generation engines, and net sales of around ¥80 billion and ¥100 billion for FY2022 and FY2025, respectively.

CGRA has analyzed automakers' electrification strategies and the tightening of government regulations and made the following predictions about structural changes in global vehicle production toward 2030: (1) global ICE/HV production will remain at a high level until around 2025; (2) HV will become a major model toward 2030, accounting for approx. 40% of the market; (3) the launch of new NEV (New Energy Vehicle = BEV: Battery Electric Vehicle+ FCV: Fuel Cell Vehicle) models will accelerate from around 2026, reaching approx. 25% of global vehicle production by 2030; and (4) the ICE market will visibly shrink from around 2025, with its share of global vehicle sales down to approx. 34% by 2030.

Figure 18: Mobility Operations sales outperform vehicle production



Source: Created by CGRA based on various materials, etc. / Vehicle production: Projected by CGRA

BEVs do not need timing chains

Timing chains will not be needed for FCVs

In the mid-1980s, automakers shifted their focus to lighter-weight and lower-noise models, and a movement to replace steel timing chains with rubber timing belts was seen. From around 1995, however, a trend of returning to timing chains was intensifying in response to increasing needs for smaller-size/higher-performance engines. As a result, the Company’s Mobility Operations posted record-high operating income of ¥12.3 billion in FY2016 and record-high net sales of ¥79.5 billion in FY2017.

However, in around 2017, a CASE (Connectivity, Autonomous, Shared, and Electric) automotive debate set in, and countermeasures against global warming and increasingly intensifying ESG momentum accelerated discussions on automotive electrification. BEVs (Battery Electric Vehicles), on which only a motor is used as a driving unit (division), do not need timing chains, as no engine is required. This could be one of the causes of a decline in the Company’s PBR. But engines are equipped in HV and PHV models, for which timing chains should continue to be adopted as well.

Enedrive Chains, e-fuel, and hydrogen engines are the key to Operations’ future

The “motors + chains” mechanism on BEVs has many benefits

As the adoption of small-size and high-speed motors on BEVs is expected to increase, “motors + gears” should become a generally accepted mechanism. That said, compared to gears, chains have more flexibility in layout, higher power transmission efficiency, as well as more advantages in terms of quantity and cost. We should continue to closely watch the adoption of the Company’s Enedrive Chains.

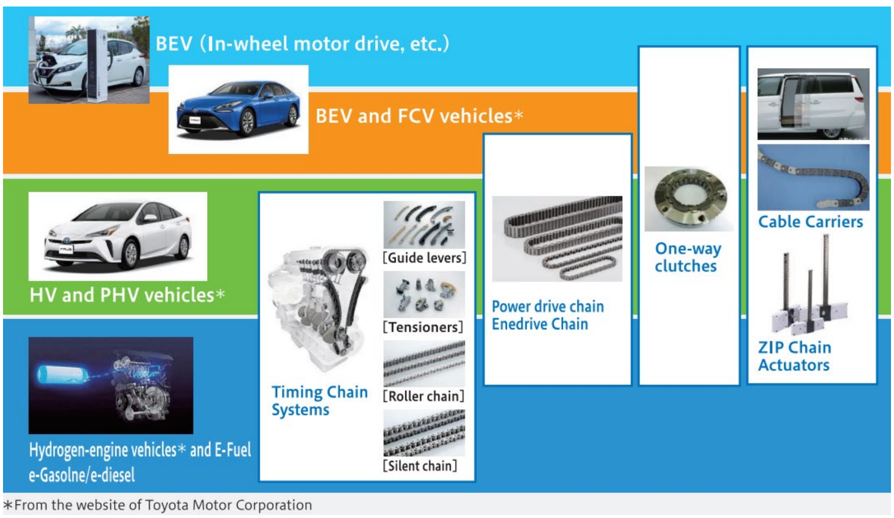
An e-fuel is a liquid hydrocarbon fuel catalytically synthesizing CO2 and H2 (hydrogen), made through water electrolysis, and its development is led by VW Europe and Toyota Motor. Automakers are trying to keep newcomers such as Apple Inc. away by preserving their existing ICE technologies. Japanese automakers are in an advantageous position in HV technologies, while U.S., Chinese, and South Korean automakers are more EV-oriented. As such, mainly among European and Japanese automakers, some moves to explore e-fuel options are seen. In addition, a hydrogen engine led by Toyota Motor generates power by changing the fuel-supply/fuel-injection system in a conventional gasoline engine to burn compressed hydrogen gas, thus it does not generate CO2 when driving. Depending on developments in e-fuel and hydrogen engine operations, CGRA believes that “demand for timing chains for engines will disappear in the EV era,” about which the stock market is concerned, could transform into “they become a stable profit center.”

Figure 19: EV chain/gear characteristic analysis and Company products mapping

<Advantages over gear power transmission>

	Chain	Gear
Layout flexibility	A	B
Durability	A	A
Heat resistance	A	A
Drive efficiency	A	B
NV Performance	A	B
Mass	A	C
Ease of assembly	A	A
Cost	A	B

A: Good
B: Average
C: No good



Source: Company website and briefing materials on Mid-Term Plan 2025

・Market Overview and Earnings Outlook for Materials Handling Operations

Materials handling market will continue to grow steadily, primarily for the e-commerce (EC) sector

The materials handling (logistics equipment) market suffered from a structural slump in demand following the burst of the bubble economy. However, with Amazon (US) starting operations in 1994 and the EC market launched full scale around 2015, the market has since grown rapidly, stimulated by a sharp increase in global demand for small-lot shipments and labor shortages. Daifuku Co., Ltd., the world leader with an estimated 15% global market share, recorded net sales of ¥267.3 billion and operating income of ¥14.9 billion for FY2014. Four years later in FY2018, they posted record-high net sales and record-high operating income of ¥459.6 billion and ¥54.7 billion, respectively, achieving fast growth.

The materials handling market has grown sharply

Materials Handling's operating income margin after excluding CCC is improving

Materials Handling Operations' net sales reached a record high of ¥64.2 billion in FY2019 in the wake of the acquisition of US Central Conveyor Company (CCC) in June 2018 and increased investment in logistics such as e-commerce. Operating income margin after the bankruptcy of Lehman Brothers, however, reached a peak at ¥1.9 billion in FY2014 (operating income margin: 4.3%). Subsequently, CCC's performance worsened as it was hit by the closure of automobile factories in the US and the adverse impact of COVID-19, and the Operations fell into an operating loss of ¥2.2 billion in FY2020. Noting that operating income margin after excluding CCC stands at 5.3%, the profitability improvement effects seem to become apparent. With improvements in CCC's profitability considered, the Company's FY2021 projections for Materials Handling Operations are: Net sales of ¥66.2 billion or +24% year-on-year (1H: ¥28.4 billion, 2H: ¥37.8 billion), and operating income of ¥1.5 billion (operating income margin: 2.3%, 1H: ¥0.1 billion, 2H: ¥1.4 billion). With Mr. Jeff Brinker, who was headhunted from a competitor, Dearborn Mid-West, on board as its new president, CCC will strengthen the project management system, pursue synergy effects as the Tsubaki Group, and strengthen relationships with existing and emerging automakers to enhance its profit structures.

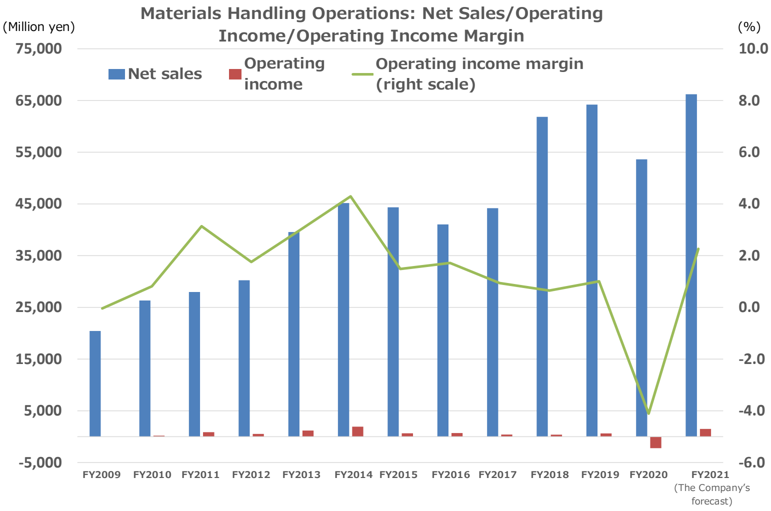
Operating income margin after excluding the acquired CCC should improve further

The gap in operating income margin with Daifuku lies in the service business

Daifuku's operating income margin is relatively high at 9.4% for FY2020. According to CGRA's calculations, Daifuku's service business, with its operating income margin estimated at 15%, supposedly earns 25% of net sales, while their overall operating income margin is estimated at about 7%. Operating income margin in Daifuku's domestic operations (35% of net sales) is also estimated at around 5%, which suggests that they secure its high profitability in overseas markets. In Tsubakimoto Chain's case, the service (maintenance) to net sales ratio is relatively low at around 20%, despite a high percentage of domestic sales. CGRA thus believes that strategies such as strengthening the after-sales service business, improving US CCC's profitability, enhancing engineering capabilities, and expanding the systems integration business are the key to improved profitability.

Strategies such as strengthening after-sales service business should be adopted

Figure 20: Materials Handling Operations net sales/operating income/operating income margin



Source: Created by CGRA based on Company documents, etc.

(5) Financial and Non-Financial Analyses

・Financial Analysis

The Company maintains strong B/S, but its challenge is how to manage working capital

As of the end of FY2020, the Company secured a consolidated equity ratio of 60.5% (+4.6% from five years ago) and retained earnings, to be used as the source of dividends, reached ¥96.8 billion on a stand-alone basis. With dividend per share for FY2021 expected at 110 yen (total dividends: ¥4.1 billion), the Company seems to have generous funds for dividends compared to a total of ¥20-24 billion dividends set out in the new Mid-Term Plan.

B/S is strong, but there is still room for improvement in comparison to other companies

As of the end of FY2020, tangible fixed assets turnover (=net sales / average tangible fixed assets for the last two years) was 1.66 (which reached a peak at 2.07 in FY2018), higher than 1.32 for OSG, a tool manufacturer, but lower than 2.43 for Aisin, a manufacturer of automotive parts such as transmission parts, or 1.96 for NSK, a bearing maker. Proactive investments made in Mobility Operations since FY2015, as well as a decline in revenue resulting from the trade dispute between China and the US and the COVID-19 impact, seem to be among the factors.

Looking at working capital as of the end of FY2020, CCC (Cash Conversion Cycle = days of inventory outstanding + days of sales outstanding - days of payables outstanding) was 154.8 days (average for the last five years: 134.0 days). This cycle is also longer than NSK’s 120.9 days (average for the last five years: 99.9 days). Specifically, days of inventory outstanding and days sales outstanding are long. This figure seems to be affected by Materials Handling Operations earning 28% of the Company’s net sales, but the CCC of Daifuku, the largest materials handling company, is 98.8 days. In CGRA’s view, the Company must have some issues other than Materials Handling Operations. For reference, the CCC of Daido Kogyo, a manufacturer of chains for internal combustion engines and industrial machines, was 145 days for FY2020.

On B/S, goodwill is stated at only ¥2.5 billion, whereas investment securities is at ¥28.5 billion (approx. 15% of shareholders’ equity). This makes us wonder, in terms of corporate governance, if there is any problem left with the Company’s unwinding of cross shareholdings.

The Company is able to create stable FCF, which ensures positive net cash

Average operating cash flow and average free cash flow for the last five years were ¥25 billion and ¥7.7 billion, respectively. As of the end of FY2020, the Company had interest-bearing debt of ¥41.1 billion and liquidity in hand of ¥48 billion (cash and deposits ¥41.8 billion + securities ¥6.1 billion), totaling ¥6.8 billion positive net cash. The Company had ¥7.6 billion positive net cash in FY2017, then the figure turned negative in the last two fiscal years due to an increase in interest-bearing debt, before recovering to a positive in FY2020 for the first time in three fiscal years, thanks to the reduction of working capital and capital investment.

CGRA’s view: B/S reforms are needed to achieve 10% ROE

After the bankruptcy of Lehman Brothers, ROE reached a peak at 10.9% in FY2014 and fell to 4.8% in FY2020 (record high: 12.8% in FY2007). The breakdown of 4.8% ROE based on the DuPont model is as follows: Net income margin: 4.5% (FY2014: 7.2%), total assets turnover (= net sales/average total assets for the last two fiscal years): 0.6 (FY2014: 0.8), and financial leverage (= average total assets for the last two fiscal years/average shareholders’ equity for the last two fiscal years): 1.7 (FY2014: 1.9). This gives an impression of excess shareholders’ equity. In fact, the Company’s shareholders’ equity increased nearly 1.3-fold from ¥140.4 billion at the end of FY2014 to ¥185.7 billion at the end of FY2020 (while total assets increased nearly 1.2-fold).

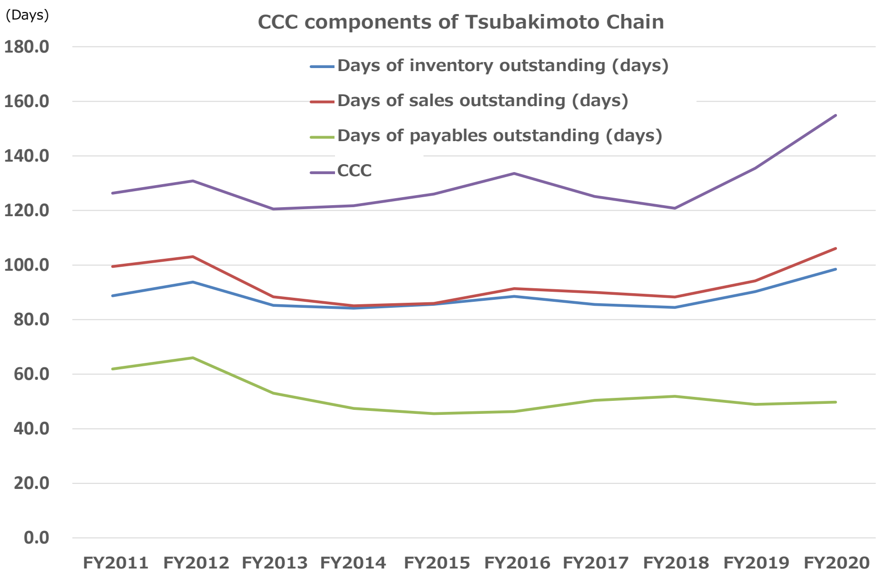
Cross shareholdings should be liquidated

Among other companies, NSK, for example, marked its record-high ROE at 15.2% in FY2014. Despite its net income margin of 6.4% then, which was lower than Tsubakimoto Chain’s, NSK’s total assets turnover was 0.9, with financial leverage at 2.6. Therefore, CGRA believes that for Tsubakimoto Chain to improve ROE, improving profitability as well as B/S reforms, such as reducing inventories and trade receivables, selling off cross shareholdings, using outsourcing (= reducing tangible fixed assets), and enhancing shareholder returns, are required.

Figure 21: ROE breakdown by DuPont analysis model

DuPont model	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Net income margin (%)	4.7	5.0	5.7	7.2	6.3	7.3	6.8	5.8	5.1	4.5
Total assets turnover (net sales / total assets)	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.6
Financial leverage (total assets / shareholders' equity)	2.2	2.1	2.0	1.9	1.8	1.8	1.7	1.7	1.7	1.7
ROE (%)	7.9	7.7	9.3	10.9	9.0	9.9	9.2	8.1	6.7	4.8
NOPAT (Million yen)	7,309	7,724	10,546	13,622	14,690	15,439	15,096	17,138	12,076	6,348
Invested capital (Million yen)	123,740	145,103	158,166	181,198	180,632	190,852	196,346	219,226	217,564	228,662
ROIC (%)	5.9	5.3	6.7	7.5	8.1	8.1	7.7	7.8	5.6	2.8

Figure 22: Room for improvement in inventories and trade receivables



Source: Created by CGRA based on Company documents, etc.

・Non-Financial Analysis and Governance Structure

Advent of the age of non-financial data-based thinking

Sustainable corporate growth requires economic and social value to be improved through business activities that involve solutions to social issues. In recent years, along with discussions over ESG and SDGs, increasing amounts of investment funds are shifting from active to passive and flowing into ESG funds.

The disclosure of non-financial information such as ESG and SDGs is becoming essential to all stakeholders, not only to long-term investors. The price and performance of products and efficient production activities are (of course) important, but an era has arrived in which the outcomes of how to produce eco-friendly products in an environment-friendly manner is also important for corporate branding and sales strategies. Toyota Motor has already started requiring its suppliers to reduce their CO2 emissions, and it is likely that some automakers and industrial machinery makers will procure parts only from carbon-neutral companies.

The Company will disclose more KPIs, while its risk analysis is left with some issues

The Company changed the name of its Corporate Report to Integrated Report in 2019, in an effort to enhance ESG and disclose SDGs. The "2020 Tsubaki Group Integrated Report" (71 pages) sets materiality (key issues) in line with each ESG item and, as for the environment, it lists KPIs, with 2030 as the final target year, on items such as the reduction of total CO2 emissions (domestic Group companies to reduce emissions by 2030 by 46% vs. 2013 levels), waste recycling rate, and PRTR (toxic chemicals) emissions.

As for governance, KPIs are defined and strengthened from the risk management and compliance point of view. Going forward, in addition to TCFD, whose disclosure is required by the revised Corporate Governance Code, the Company may need to provide risk disclosure and explanations on countermeasures/opportunities from a medium and long-term perspective, as well as strengthen ESG activities across the organization.

Governance structure to be strengthened further

The history of the Company's governance structure is as outlined below. An executive officer system was introduced in 2004, and one outside director was appointed and outside auditors were increased from one to two. In 2013, the number of outside directors was increased from one to two. In 2015, management reform was executed, through which CEO (chief executive officer) and COO (chief operating officer) were separated. In 2017, the number of outside directors was increased from two to three (percentage of outside directors: 30%). In 2018, the Company shifted to a system in which executive officers serve as general managers of business segments. In 2019, strategy formulation and oversight by the Board of Directors and business execution by executive officers were clearly separated. In addition, the dual role of director and executive officer was abolished, and a Nomination and Remuneration Committee was established.

We expect the Company (Board) to disclose the skill matrix of the Board required for the new strategies under the Mid-Term Plan.

The Nomination and Remuneration Committee consists of three outside directors, with attendance of the CEO as an observer. The Committee is chaired by Mr. Shuji Abe.

As of July 2021, the Company has seven directors, including three outside directors (percentage of outside directors: 42.9%). Chaired by Mr. Ohara, Chairman and CEO, the Board of Directors meetings are attended by seven directors, two standing Audit & Supervisory Board Members, and two outside Audit & Supervisory Board Members. The percentage of female directors is 14% (one person).

Mr. Shuji Abe, outside director, assumed his post as the Company's outside director in June 2013. He previously served as Executive Vice President and Director of Yanmar Diesel Co., Ltd(present Yanmar Holdings Co., Ltd) and President and Representative Director of Yanmar Agricultural Equipment Co., Ltd(present Yanmar Agribusiness Co., Ltd). Mr. Keiichi Ando assumed his post as the Company's outside director in June 2017. He previously served as Representative Director, Deputy President and Executive Officer of Sumitomo Mitsui Banking Corporation and President and Representative Director, CEO of New Kansai International Airport Company, Ltd. He also serves as an Outside Director for Shionogi & Co., Ltd and Daihen Corporation, concurrently. Ms. Hisae Kitayama assumed her post as the Company's outside director in June 2020. She previously served as Senior Executive Director of KPMG AZSA LLC. She currently serves as Representative of Kitayama Public Accounting Office and concurrently serves as an Outside Director for Ebara Corporation.

We expect the Company (Board) to disclose and explain the skill matrix of directors and other information required for the consistent execution of the new Mid-Term Plan strategies.

Does stock price awareness need to be raised to increase corporate value?

At the annual general meeting of shareholders held on June 26, 2020, the Company introduced a restricted stock compensation system for directors (excluding outside directors) in order to further share value with shareholders. However, the percentage of fixed compensation to executive compensation is as high as approx. 70% (up from the previous year's 50%), which suggests that the incentive effect does not work well. For reference, NSK's fixed compensation ratio is 40%. CGRA believes that, in order to achieve the targets under Mid-Term Plan 2025 without fail, it would be effective to create a consensus among all employees to work together to enhance corporate and social value by, for example, increasing the Company's directors' shareholdings in the Company, expanding the employee shareholding plan, and introducing a compensation system linked to various ESG-related KPIs, in hopes of providing incentives.

Apparently, the Company needs to take some measures to raise stock price awareness

(6) Consolidated Statements of Income/Balance Sheets/Cash Flows

・Figure 23 : Consolidated Statements of Income

(¥ mn,%)	12/3	13/3	14/3	15/3	16/3	17/3	18/3	19/3	20/3	21/3	22/3COE
Sales	**144,896**	**150,002**	**178,022**	**196,738**	**203,976**	**198,762**	**215,716**	**238,515**	**226,423**	**193,399**	**225,000**
yoy	4.8	3.5	18.7	10.5	3.7	-2.6	8.5	10.6	-5.1	-14.6	16.3
Cost of goods sold	104,156	107,396	126,132	137,014	142,241	138,191	152,630	171,959	166,158	145,764	-
Cost of goods sold/Sales	71.9	71.6	70.9	69.6	69.7	69.5	70.8	72.1	73.4	75.4	-
SG&A	28,657	30,027	34,536	38,296	40,164	38,924	42,392	44,767	44,118	38,737	-
SG&A/Sales	19.8	20.0	19.4	19.5	19.7	19.6	19.7	18.8	19.5	20.0	-
Operating income	**12,081**	**12,579**	**17,354**	**21,427**	**21,570**	**21,647**	**20,694**	**21,789**	**16,146**	**8,896**	**16,000**
yoy	9.6	4.1	38.0	23.5	0.7	0.4	-4.4	5.3	-25.9	-44.9	79.9
OP margin	8.3	8.4	9.7	10.9	10.6	10.9	9.6	9.1	7.1	4.600	7.1
Non-operating balance	59	235	639	836	539	357	1,049	-167	552	2,129	1,000
Recurring profits	**12,140**	**12,813**	**17,993**	**22,263**	**22,109**	**22,004**	**21,743**	**21,622**	**16,698**	**11,025**	**17,000**
yoy	9.3	5.5	40.4	23.7	-0.7	-0.5	-1.2	-0.6	-22.8	-34.0	54.2
RP margin	8.4	8.5	10.1	11.3	10.8	11.1	10.1	9.1	7.4	5.7	7.6
Extraordinary balance	-233	-168	-421	321	-1,665	-429	-579	-2,189	111	1,133	-
Extraordinary profits	73	6	6	365	75	10	0	4	533	1,190	-
Extraordinary losses	306	174	427	44	1,740	439	579	2,193	422	57	-
Pretax income	11,907	12,645	17,572	22,583	20,444	21,575	21,164	19,433	16,809	12,158	-
Taxes and deferred taxes	4,469	4,750	6,856	8,163	7,643	6,721	6,422	5,577	5,123	3,377	-
Tax ratio	37.5	37.6	39.0	36.1	37.4	31.2	30.3	28.7	30.5	27.8	-
Minority interests	623	464	503	267	33	257	75	75	109	75	-
Net profits	**6,815**	**7,431**	**10,213**	**14,153**	**12,768**	**14,597**	**14,667**	**13,781**	**11,576**	**8,706**	**12,500**
yoy	11.8	9.0	37.4	38.6	-9.8	14.3	0.5	-6.0	-16.0	-24.8	43.6
NP margin	4.7	5.0	5.7	7.2	6.3	7.3	6.8	5.8	5.1	4.5	5.6
EPS	36.63	39.69	54.58	75.65	68.24	390.15	387.44	364.03	308.71	235.23	337.70

Segment Sales											
Chain	51,692	50,250	55,828	61,721	63,998	60,600	67,338	72,023	67,526	61,312	65,800
Motion Control	21,364	19,664	21,612	22,557	21,975	21,563	24,156	25,591	23,813	19,697	22,100
Mobility	43,509	49,397	60,674	66,978	73,473	75,147	79,545	78,992	70,949	57,777	72,300
Material Handling	27,977	30,246	39,565	45,169	44,354	41,043	44,187	61,827	64,212	53,618	66,200
Others	2,913	2,846	2,719	2,968	3,186	3,001	3,331	3,548	3,542	3,941	2,200
Elimination	-2,559	-2,402	-2,378	-2,658	-3,011	-2,594	-2,843	-3,469	-3,622	-2,948	-3,600
Consolidated Sales	144,896	150,002	178,022	196,738	203,976	198,762	215,716	238,515	226,423	193,399	225,000

Segment Profit											
Chain	3,462	3,586	3,763	5,002	6,172	7,102	8,502	10,292	8,406	7,862	6,700
Motion Control	2,512	1,955	2,273	2,400	2,427	2,218	3,060	3,340	2,189	816	1,300
Mobility	4,846	6,494	10,119	11,916	12,258	12,385	10,258	8,734	5,791	3,714	8,000
Material Handling	878	531	1,192	1,940	659	706	416	402	647	-2,202	1,500
Others	170	143	63	123	84	-1	-40	-43	20	-330	-300
Elimination	213	-130	-56	46	-30	-763	-1,502	-936	-907	-964	-1,200
Consolidated Operating Income	12,081	12,579	17,354	21,427	21,570	21,647	20,694	21,789	16,146	8,896	16,000

Profit Margin											
Chain	6.7	7.1	6.7	8.1	9.6	11.7	12.6	14.3	12.4	12.8	10.2
Motion Control	11.8	9.9	10.5	10.6	11.0	10.3	12.7	13.1	9.2	4.1	5.9
Mobility	11.1	13.1	16.7	17.8	16.7	16.5	12.9	11.1	8.2	6.4	11.1
Material Handling	3.1	1.8	3.0	4.3	1.5	1.7	0.9	0.7	1.0	-4.1	2.3
Others	5.8	5.0	2.3	4.2	2.6	0.0	-1.2	-1.2	0.6	-8.4	-13.6
Consolidated Operating Income Margir	8.3	8.4	9.7	10.9	10.6	10.9	9.6	9.1	7.1	4.6	7.1

Note: The Company renamed its segments in FY2021: Precision Machinery Operations became Motion Control (MC) Operations, and AP Clutch was transferred to Mobility Operations. Automotive Parts Operations was renamed Mobility Operations. Power Transmission Operations, which controls the chain operations and the MC operations, was established.

Consolidated EPS for FY2016/FY2017/FY2018 are adjusted to reflect the value after stock consolidation (reverse split).

Source: Created by CGRA based on Company documents, etc.

・Figure 24 : Consolidated Balance Sheets and Cash Flows

(¥ mn, %)	12/3	13/3	14/3	15/3	16/3	17/3	18/3	19/3	20/3	21/3
Current assets	**86,630**	**96,782**	**100,626**	**116,619**	**116,536**	**125,400**	**132,144**	**143,949**	**134,083**	**145,185**
Cash on hand and in banks	9,661	19,678	13,518	17,504	20,195	26,332	29,590	33,647	29,019	41,869
Receivables	42,886	41,844	44,337	47,338	48,726	50,760	55,612	59,807	57,046	55,377
Marketable securities	4,468	560	7,877	12,020	7,533	7,965	4,646	4,114	3,965	6,189
Inventories	25,893	29,298	29,625	33,574	33,153	33,875	37,676	41,884	40,278	38,389
Other current assets	3,722	5,402	5,269	6,183	6,929	6,468	4,618	4,495	3,773	3,360
Fixed assets	**105,135**	**119,055**	**128,213**	**142,122**	**137,570**	**141,814**	**151,429**	**161,966**	**160,015**	**162,147**
Tangible fixed assets	82,761	90,481	96,852	101,613	102,777	105,435	113,285	116,946	118,579	115,059
Intangible fixed assets	1,716	5,381	5,807	5,132	4,352	3,841	2,968	12,787	11,361	10,695
Investments and other assets	20,657	23,192	25,554	35,376	30,444	32,537	35,175	32,233	30,074	36,391
Total assets	**191,765**	**215,837**	**228,840**	**258,742**	**254,106**	**267,215**	**283,574**	**305,916**	**294,098**	**307,332**
Current liabilities	**54,544**	**57,543**	**62,003**	**59,435**	**55,525**	**66,558**	**70,797**	**82,617**	**67,081**	**61,690**
Notes payable - trade	27,779	26,488	25,269	25,902	24,986	25,462	34,148	33,701	27,030	25,674
Short-term borrowings	10,594	11,868	18,847	11,761	10,547	20,225	11,292	22,779	17,139	11,953
Other current liabilities	16,171	19,187	17,887	21,773	19,992	20,872	25,356	26,137	22,912	24,064
Long-term liabilities	**40,885**	**49,696**	**45,208**	**55,014**	**52,766**	**44,439**	**43,012**	**47,844**	**50,961**	**58,147**
Convertible bonds	0	0	0	10,000	10,000	10,000	10,000	15,000	15,000	15,000
Long-term debt	16,810	24,638	17,690	15,146	14,269	4,409	5,288	5,992	9,369	14,214
Other long term liabilities	24,075	25,058	27,518	29,868	28,497	30,030	27,723	26,851	26,592	28,933
Total liabilities	**95,430**	**107,239**	**107,212**	**114,449**	**108,291**	**110,997**	**113,809**	**130,461**	**118,043**	**119,838**
Minority interests	6,412	6,577	3,194	3,851	3,774	3,744	1,848	1,720	1,695	1,703
Shareholders' equity	89,923	102,019	118,433	140,439	142,041	152,474	167,917	173,734	174,360	185,791
Total liabilities and shareholders' equity	**191,766**	**215,837**	**228,840**	**258,742**	**254,106**	**267,215**	**283,574**	**305,916**	**294,098**	**307,332**

(¥ mn, %)	12/3	13/3	14/3	15/3	16/3	17/3	18/3	19/3	20/3	21/3
Operating CF	**11,626**	**15,350**	**19,761**	**22,189**	**19,090**	**25,434**	**27,657**	**24,197**	**20,275**	**27,890**
Income before income taxes and minority interests	11,907	12,645	17,572	22,583	20,444	21,575	21,164	19,432	16,809	12,159
Depreciation and amotization	7,403	7,360	8,745	9,476	10,402	10,342	11,005	12,366	12,739	12,682
working capital total	-2,265	832	-220	-4,110	-3,721	-2,804	720	-5,847	-3,318	3,143
Income taxes	-4,667	-4,695	-6,099	-7,193	-9,785	-6,126	-6,664	-7,354	-5,089	-3,810
others	-752	-792	-237	1,433	1,750	2,447	1,432	5,600	-866	3,716
Investing CF	**-10,487**	**-18,401**	**-17,166**	**-14,306**	**-13,593**	**-13,420**	**-17,389**	**-32,088**	**-14,241**	**-9,560**
Purchase of investment securities	-712	-512	-223	-548	-194	-229	-11	-212	-15	-252
Proceeds from sales of investment securities	3	14	665	0	0	19	0	328	215	166
Additions to property, plant and equipments	-7,553	-11,121	-13,232	-9,384	-13,750	-14,151	-15,542	-17,273	-14,661	-9,723
Proceeds from sales of fixed assets	193	187	104	356	147	135	167	198	171	689
Purchase of subsidiary investment	0	-6,334	0	0	0	0	0	-15,457	0	0
Others	-2,418	-635	-4,479	-4,730	207	807	-2,001	327	48	-440
FCF	**1,138**	**-3,050**	**2,594**	**7,882**	**5,496**	**12,013**	**10,268**	**-7,890**	**6,034**	**18,329**
Financial CF	**-5,460**	**6,325**	**-3,196**	**-2,647**	**-5,476**	**-4,084**	**-13,191**	**12,679**	**-10,385**	**-4,354**
Net increase(decrease) in long term debt	-6,151	9,880	-642	-1,239	-1,540	-688	-9,410	15,780	-2,398	1,213
Net increase(decrease) in short term debt	2,460	-1,949	-175	1,135	-190	913	1,042	1,813	376	-1,687
Cash divident paid	-1,302	-1,310	-1,497	-2,432	-3,554	-3,928	-4,544	-4,731	-4,541	-3,330
Others	-467	-296	-882	-111	-192	-381	-279	-183	-3,822	-550
Effect of exchange rate changes on cash and cash equivalents	-118	793	1,378	741	-957	-649	374	-414	-358	730
Changes on cash and cash equivalents	-4,440	4,068	776	5,976	-937	7,279	-2,548	4,374	-4,708	14,706
cash and cash equivalents at the beginning of the year	17,308	13,916	20,194	21,291	27,360	26,422	34,142	31,712	36,087	31,378
cash and cash equivalents at the end of the year	13,916	20,194	21,291	27,360	26,422	34,142	31,712	36,087	31,378	46,084
Sales/total assets (x)	0.77	0.74	0.80	0.81	0.80	0.76	0.78	0.81	0.75	0.64
Sales/fixed assets (x)	1.77	1.73	1.90	1.98	2.00	1.91	1.97	2.07	1.92	1.66
Sales/current assets (x)	1.72	1.64	1.80	1.81	1.75	1.64	1.68	1.73	1.63	1.39
Sales/inventories (days)	88.75	93.79	85.26	84.18	85.61	88.52	85.55	84.44	90.24	98.49
Sales/receivables (days)	99.48	103.09	88.35	85.04	85.95	91.35	89.99	88.31	94.19	106.09
Sales/payables (days)	61.90	66.02	53.06	47.47	45.53	46.32	50.43	51.91	48.95	49.73
Shareholders' equity ratio (%)	46.89	47.27	51.75	54.28	55.90	57.06	59.21	56.79	59.29	60.45
CCC(days)	126.33	130.85	120.55	121.75	126.03	133.55	125.12	120.84	135.48	154.85

Source: Created by CGRA based on Company documents, etc.

Analysts Responsible for this Report

Shinji Kuroda, Partner and Senior Analyst

Kuroda joined Kankaku Research Institute (now Mizuho Securities) in April 1992, assigned to the Industrial Research Department. He then would join Jardine Fleming Securities (now JP Morgan Securities) in September 1999, then Goldman Sachs. Until January 2020, he worked for Credit Suisse Securities. He served as Vice President at Goldman Sachs, and Director at Credit Suisse Securities. In his career, he has been in charge of the machinery, shipbuilding, and heavy machinery sectors. He joined CGRA as a partner in June 2020. Member of the Machinery Industry Disclosure Committee, The Securities Analysts Association of Japan

Hidehiko Hoshino, CMA, Representative Director and Chief Advisor

Hoshino joined Shinko Securities (currently Mizuho Securities) in April 1987, assigned to the Corporate Research Department. He then would join Jardine Fleming Securities (now JP Morgan Securities) in 1997, joining Deutsche Securities in 2000 and UBS Securities in 2006, where he would serve until April 2016. As a sell-side analyst, he has been in charge of the machinery, shipbuilding, heavy machinery, and plant sectors for 28 years. Has served for more than 10 years as Vice Chairman of the Machinery Industry Disclosure Committee, The Securities Analysts Association of Japan. He served as Managing Director from 2003 to 2016. In June 2017, Hoshino established Capital Goods Research & Advisory Co., Ltd. (CGRA), and was appointed as Representative Director. Certified Analyst, The Securities Analysts Association of Japan

Capital Goods Research & Advisory Co., Ltd.

An advisory company specializing in the machinery sector. CGRA's main businesses are (1) support for creating integrated reports offering feedback to management while satisfying the needs of capital markets, (2) advisory services for medium-term plan creation and business strategy, as well as various IR & SR areas, (3) preparation of various materials and English translation, and (4) drafting corporate analysis sponsored reports useful for long-term investors and management.