A Comparative Study of Toshiba and Hitachi in "the Lost Decades" -Corporate Investments and Strategic Attributes-

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A Comparative Study of Toshiba and Hitachi in "the Lost Decades":

Corporate Investments and Strategic Attributes

「失われた20年」における東芝と日立の比較考察

企業投資と戦略の特性

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【Abstract】

先行研究において，「失われた10年」の本質的原因はコーポレートファイナンスを含めた金融システムの危機であり，依然として生産システムにおいて優位性があるといわれる。しかしながら，その生産システムの優位性を構築し自動車産業と共に二大主力産業として日本の高度経済成長を牽引した電機産業は，1990年初頭のバブル崩壊以降，苦闘を強いられている。また，その産業内においても企業により相違がみられる。本論は，その中でも総合電機企業として同一グループに分類されてきた東芝と日立を取り上げ，両社有価証券報告書のデータを中心に（Q-1）両社の相違はあるのか？（Q-2）ある場合は，利用データから見られる両社の相違はいつから始まったのか？　を明らかにすることである。本考察から①すでに1990年代から投資抑制のあり方に違いがあり，②投資と利益率の関係において2000年代からより相違が確認され，③2000年代における相違は，選択と集中という課題に対する両社の方向性・取り組み方の相違が起因していることが明らかとなった。

【Key Words】 Corporate Strategy, Corporate Investment, Investment Trajectory, Toshiba, Hitachi

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I. Introduction

The second half of the 20th century saw the Japanese economy, and its related corporate system, go from one extreme to the other. At the onset Japan experienced rapid and significant economic growth from the 1950s up until 1990. This "Japanese post-war economic miracle" was an unprecedented economic phenomenon. In contrast, after the bubble economy burst in the early 1990s, Japan has struggled considerably to liberate itself from a prolonged economic slump, appropriately called "The Lost Decades." Long gone are the glorification and awe as the economic and corporate systems of today's Japan are subject to a much more negative assessment than was the case in the "miracle years."

In reviewing representative literature that focused on the cycle of change affecting the Japanese economic and corporate systems, Takeo Kikkawa vigorously researched Japan's post-war economic and business history. In doing so, he proposes that the crisis and resulting slump of the Japanese economy that began in the 1990s did not arise entirely from the economic system itself (nor from the Japanese corporate system for that matter) but more specifically from the Japanese financial system which had a consequential and significant influence on the corporate financing system[i]. In fact, the manufacturing sector has still been going strong and some industries, such as automobile and steel, have maintained competitiveness throughout the period of stagnation[ii]. Kikkawa contends that revitalization of the Japanese economy requires Japanese corporations to try to free themselves from the investment restraint that has been widespread since the bursting of the bubble economy, this while the financial service sector is reformed and business enterprises obtain enhanced knowledge in equity financing[iii]. Although support from the Japanese government and intermediate organizations have been complementary, business enterprises with their active investments have traditionally been the leading players for economic growth[iv]. It is therefore crucial to the Japanese economy that Japanese enterprises reconstruct the traditional Japanese-style of management by practicing appropriate forms of investment and proving the merits of any such change in style[v].

Although Kikkawa's research project recognizes the vital importance of the Japanese post-war economy and calls for corporate investment in economic growth, the research focus is broadly cast on the industrial sector as a whole. Aoshima, Takeishi, and Cusumano [2010], in more recent research, provide an additional level of detail over the same time period. Their research reveals industry-specific differences that arose subsequent to the bubble economy crisis[vi]. The automobile and electronics industries, for example, have forged contrary paths even though both, beginning in the mid-1970s, had served as the two main forces leading Japanese economic growth. While the automobile industry has continued to perform solidly since the middle of the 1990s, even after periods of sluggish performance, the electronics industry has dropped from its prevalent role, effectively stalled in the 1990s and holding back the economy in the 2000s[vii]. The electronics industry's ratio of value-added to sales has been on the decline since the 1980s and had effectively lost its capacity to create added-value as it entered the 1990s[viii].

The stagnation of the electronics industry and its member firms often appears in discussions related to diversification strategy, with strategic management and corporate behavior serving as the backdrop. Ueno [2005] reviews notable research on the diversification of the Japanese corporation. In general, Japanese corporations actively diversified their business in the 1980s and then were later obliged to select and focus their business segments in the post-bubble economy of the 1990s. The research identified differences among the industries and corporate groups that continued to prevail until the second half of the 1990s; at that time there was a shift in course to promote growth strategies and which resulted in some firms and sectors approaching their renewal strategies in different ways. The electronics industry, for example, followed the more general retrenchment path that prevailed in most sectors, although some electronics corporations did continue to retain a high ratio of multiple businesses. In comparing firms in this sector, however, one sees variance in the forms of diversification strategies pursued (i.e. in their corporate behaviors); their respective performances do not simply follow the common understanding that "diversification strategy or high diversification does not link to high performance.[ix]"

The crisis and slump in the Japanese economy that began in the 1990s originated from aspects of the financial system, this while the Japanese manufacturing system was still maintaining strength. It is these varying degrees of difference within the manufacturing industry itself that is of particular interest. For example, while the electronics industry, as a whole, has reduced its overall influence as a driving force in Japanese economic growth since the 1990s, it can be observed that not all firms in the industry held back the economy.

In spite of growing literature on the Japanese corporate system and business economics, research in the field of corporate behavior during the periods has been relatively less detailed. To summarize, this article explores the issue at another level and attempts to complement existing research by examining two giants in the electric/electronics industry in Japan, Toshiba Corporation (Toshiba) and Hitachi Limited (Hitachi), mainly through the use of quantitative data as a mean of capturing corporate investment tendencies and responses during the period. Although both firms are considered to be rather similar industrial conglomerates, essentially competitors in several business or product lines, unique differences revealed when one analyzes key elements, such as divergent strategic decisions on major M&A actions in the 2000s. Hitachi, for example, merged with the

HDD business unit of IBM in 2003 while Toshiba acquired the nuclear power plant business of Westinghouse Electric Company in 2006. What strategy was at play for each of these influential conglomerates?

As indicated, much reliance is placed on quantitative data and the next section of this article provides a quantitative examination of Toshiba and Hitachi in terms of their respective corporate investment and financial performance from 1986 to 2010. Section III looks closer at the investment data to clarify and understand the differences between the two companies during the period. Following the investment analysis, the focus of the paper then shifts to specific business segments and their respective performances from the 2000s onwards. The last section summarizes the findings of this article.

II. Investment and Performance of Toshiba and Hitachi

Throughout the history of the Japanese electrical and electronics industry, both of these firms have been the leading players and have played vital roles in the Japanese industrial structure[x]. Toshiba was already one of the leaders in the field of electrical equipment, ever since it was first created as Tokyo Shibaura Denki (Tokyo Shibaura Electric) by the 1939 merger of one of the first Japanese heavy electric manufacturers, Shibaura Seisakusho (Shibaura Engineering Works), with the light electric manufacturer, Tokyo Denki (Tokyo Electric), which had developed the first incandescent light-bulb in Japan. The company was renamed Toshiba in 1984. Meanwhile, Hitachi was founded in 1910 as an electric repair shop division of its mother company, Kuhara Kogyo (Kuhara Mining), from which it was spun off and incorporated in 1920.

Through almost a hundred years of being competitors in the development of the industry, both firms formulated their own large corporate groups. In terms of size of corporate holdings, Hitachi still holds a larger share although Toshiba has substantively increased the number of its subsidiaries and affiliates from the period 2001 to 2010, as seen in Table 1.

Figures 1 and 2 reflect the group size on consolidated revenue and net income, which sees the Hitachi group to be far larger in size than the Toshiba group, although the unconsolidated revenue of Toshiba since 2002 has surpassed that of Hitachi.

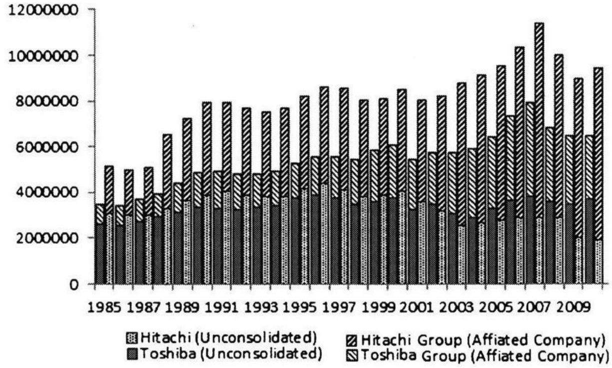
Although both firms have generally performed similarly, a difference between the two began to emerge in 2003. Figure 3 combines performance and investment data to capture developments taking place post-2003. During the periods 2003–2005 and 2006–2008, Hitachi comparatively reduced investment ratios from that of Toshiba while both firms increased revenue growth. Toshiba recovered and retained its positive net income margin while Hitachi's was negative in the 2003–2005 period and worsened in the following term.

Table 1 The Number of Subsidiaries and Affiliates of Toshiba and Hitachi Group

	Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Toshiba	The Number of Consolidated Subsidiaries	329	315	319	339	368	519	550	537	542	498
	The Number of Equity-Method Affiliates	35	52	64	71	111	153	193	199	200	202
	Total	364	367	383	410	479	672	743	736	742	700
Hitachi	The Number of Consolidated Subsidiaries	1066	1112	956	985	932	934	910	943	900	913
	The Number of Equity-Method Affiliates	108	119	165	167	158	165	171	166	157	164
	Total	1174	1231	1121	1152	1090	1099	1081	1109	1057	1077

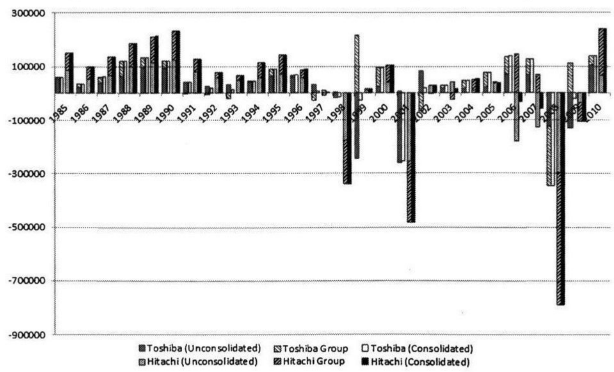
Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

Figure 1. Transition of revenue (in millions yen)



Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

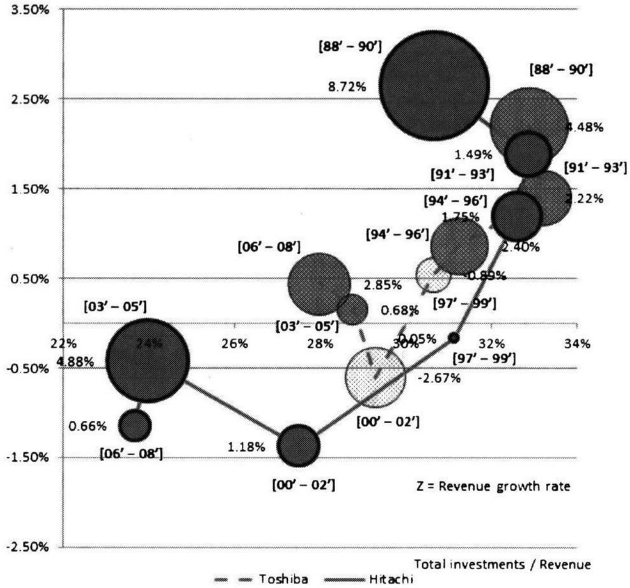
Figure 2. Transition of net income (in millions yen)



Note: "Group" data is the amount by subtracting "Unconsolidated" from "Consolidated."

Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

Figure 3. Correlation of Investment to Performance



Note: All data take a five-year moving average. As a result, although the observed period from which the data is taken is from 1986 to 2010, the actual analyzed period is reduced to 1988–2008. The revenue growth rate is derived by (1) calculating the ratio to the previous year, and (2) taking an average for every three year segment (e.g. 1988–90, 1991–93). Net income and total investment as a percent of revenue is averaged for every three-year period. Total investment is the sum of (a) acquisitions of property, plant and equipment, (b) selling, administrative and general expense, and (c) R&D expenditures.

Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

Another difference is that Hitachi consistently increased revenue growth in each of the previous terms, regardless of the investment ratio. Meanwhile Toshiba decreased revenue growth twice, in the 1997–1999 and 2000–2002 periods, concurrent to prevailing world economic crises, such as the Asian financial crisis in 1997 and the bursting of the dot-com bubble of 2001. It appears that it was in these periods of worst performance that Toshiba was more active in examining and enacting organizational restructuring plans[xi].

The late 20th century ultimately signals the point of divergence for both companies, this after having taken quite similar paths in the late 1980s up until the middle of 1990s[xii]. Additionally, as previous research suggests, the data also reveals the investment restraint exercised by both firms over the whole period under study. Why did performances differ although both reduced their investment ratios? To examine this further, the next section takes a closer look at the investment data.

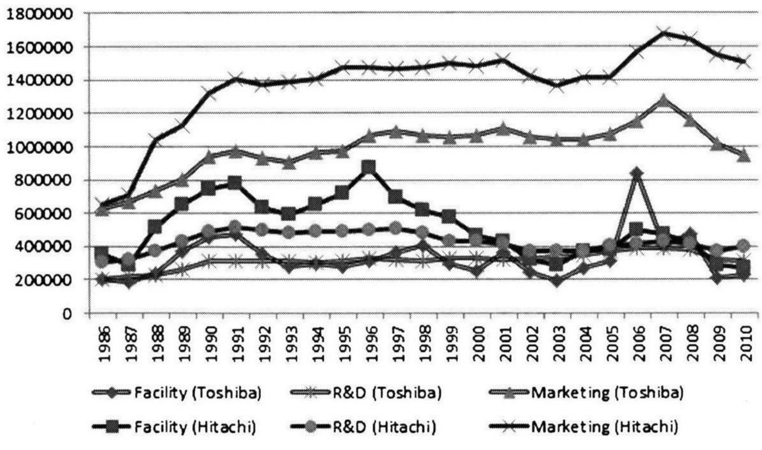
III. Investment Trajectories[xiii]

In terms of tendencies in the levels of investment, derived from Figure 3, both Toshiba and Hitachi reflect a declining investment percentage to total revenues from about the middle of the 1980s. Although there was revenue growth in the 1980s onwards, Figure 4 reveals that two out of three investment categories (Facilities and R&D) had a tendency to decrease.

The investment trajectory examines tendencies in respective investments with consideration for the different sizes of both firms' groups, as shown in Figures 5 and 6. Overall, the trajectories of both firms took a similar direction until the early 2000s. The three categories of investment were increasing until the bursting of the bubble economy in the early 1990s; there then was a decrease, especially in capital expenditure that lasted until the early 2000s. However Hitachi continued the tendency to curtail such investment while Toshiba was shifting to a relative increase in these investments during the February 2002 to October 2007 Izanami boom, which was the longest period of prosperity in Japanese economic history.

Digging deeper some distinctions arise. Toshiba saw higher ratios in two categories of investment, namely in marketing & administrative and in R&D expenditures. More specifically, Toshiba managed to relatively maintain a stable percent ratio in these investment categories during the 1990s while consistently reducing investment in capital, with two of three declining since 2003. Hitachi, on the other hand, had decreased the investment ratio in both capital/facilities and R&D in

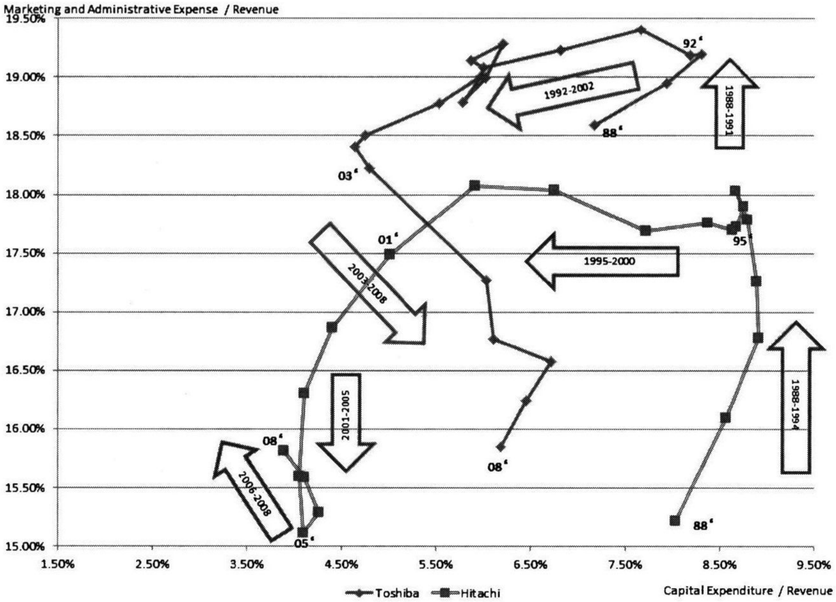
Figure 4. A Time Series of Consolidated Investment Data (in millions yen)



Note: Amount of "Facilities" investment is taken as acquisitions of property, plant and equipment, "Marketing" as selling, administrative and general expense from which is subtracted R&D expenditures, and "R&D" stands as R&D expenditures.

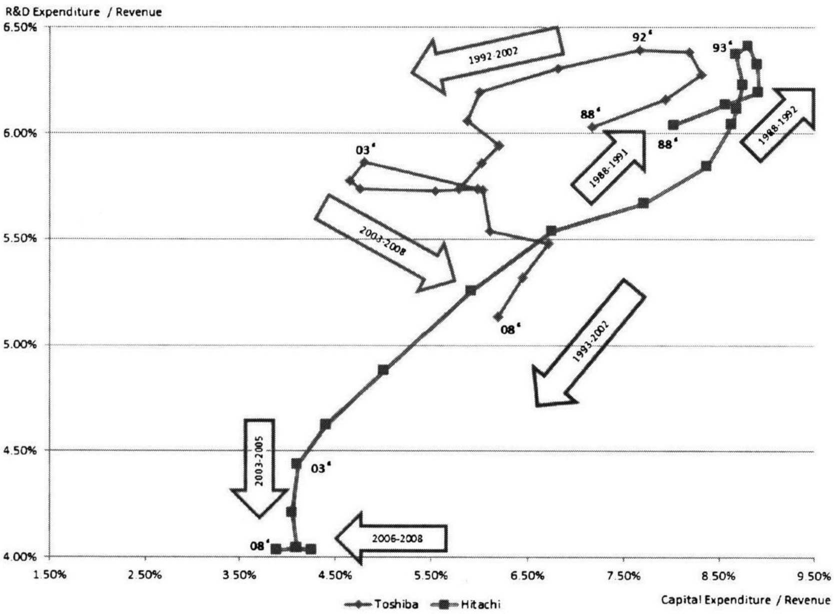
Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

Figure 5. Correlation of Capital and Marketing & Administrative expenditure



Note: To derive the point of inflection of investment, all data take a five-year moving average. As a result, although the observed period from which the data is taken is from 1986 to 2010, the actual analyzed period is reduced to 1988–2008.
Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

Figure 6. Correlation of Capital and R&D expenditure



Note: To derive the point of inflection of investment, all data take a five-year moving average. As a result, although the observed period from which the data is taken is from 1986 to 2010, the actual analyzed period is reduced to 1988–2008.
Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

the same period and its investment in marketing & administrative was rapidly reduced, while capital investment ratio was stable from the early 2000s and then increasing after 2006.

In terms of investment, differences already arose between the two in the 1990s. However, by considering the correlation of investments to performance, the analysis confirms that the "pre-2003 and post-2003" juncture was a turning point between the two firms.

Toshiba continued to decline two of the three investments (R&D and marketing et al) percentages since 2003, and it recovered and retained a positive net income margin. Hitachi had stopped decreasing its investment in capital/facilities while continuing to rapidly reduce the two other investment categories after 2003, then from 2006 onwards the marketing and administrative investment ratio increased while the other two investments ratios remained stable. Unlike Toshiba, Hitachi has not been able to obtain a positive average net income margin in the 2000s, even though its 2010 net income reflects relatively more growth than that of Toshiba.

How do these investment trajectories affect or reflect their respective performances? In order to clarify this difference post-2001, the next section takes a closer look at segment data in order to examine the profit structures of each firm in the 2000s.

IV. Segment Performance

Toshiba advanced its ongoing corporate reorganization in 2003, when it reformed to a four-fold approach, reducing its business structure from 6 to 4 segments, in order to realize the goals laid out in its plan.[xiv] Hitachi also adopted an in-house company system in 2009, which saw Hitachi's business segment structure increase from 7 to 10 segments. For these reasons there are limitations to obtaining comparative business segment information from their *Yuka-shoken-hokokusho* for years previous to 2003 and after 2008, so the period of examination in this section is restricted to the 2003–2008 timeframe.

Tables 2 and 3 clearly reflect Toshiba's features. Although the digital products segment occupied the highest ratio in sales, on average it was electronics devices (including semiconductor, flash memory, LSI and so on) and social infrastructure (including nuclear and thermal power, broadcasting and networks systems, MRI and so on) that were the highest in operating profit ratios. As for investment in capital, shown in Table 3, the electronics devices segment experienced a much higher investment than other segments.

Hitachi's uniqueness is reflected, to some degree, in having less consistency in its performance and capital data for this period, as shown in Tables 2 and 3. While its information & telecommunication system (including systems integration, software, HDD, mainframes, telecommunications equipment and so on) and power & industrial system (including nuclear and thermal power,

Table 2 Sales and Operating Profit (%) by Business Segmentsxv

Sales	Year	2003	2004	2005	2006	2007	2008	Average
Toshiba	Dlgital Products	32.85%	35.14%	36.90%	36.57%	35.70%	34.28%	35.24%
	Electronic Devices	20.98%	20.65%	20.19%	21.60%	21.03%	18.41%	20.48%
	Soclal Infrastructure	28.02%	27.89%	27.38%	26.95%	29.26%	33.29%	28.80%
	Home Appllances	10.42%	10.44%	10.00%	9.76%	9.37%	9.37%	9.89%
	Other	7.73%	5.67%	5.52%	5.11%	4.65%	4.64%	5.59%
Hitachi		2003	2004	2005	2006	2007	2008	Average
	Informetion & Telecommunication Systems	22.57%	21.27%	21.45%	20.96%	21.71%	22.81%	21.79%
	Electronic Devices	12.80%	12.38%	10.94%	10.91%	10.17%	10.12%	11.22%
	Power & Industrlal Systems	22.41%	23.58%	25.48%	25.62%	28.05%	29.10%	25.71%
	Digital Media & Consumer Products	11.96%	12.00%	11.86%	12.77%	11.83%	11.09%	11.92%
	High Functional Materials & Comonents	12.65%	14.10%	14.54%	15.21%	14.74%	13.69%	14.15%
	Logistics, Services & Others	12.25%	11.70%	11.03%	10.29%	10.00%	8.58%	10.81%
	Flnancial Services	5.37%	4.97%	4.70%	4.24%	3.50%	3.62%	4.40%

Operating Profit	Year	2003	2004	2005	2006	2007	2008	Average
Toshiba	Dlgital Products	−13.67%	4.69%	8.64%	6.05%	6.30%	−5.68%	1.06%
	Electronic Devices	67.19%	59.73%	51.08%	45.94%	31.01%	−129.19%	20.96%
	Social Infrastructure	33.67%	31.35%	31.71%	37.12%	54.92%	45.27%	39.01%
	Home Appllances	1.99%	−2.15%	1.12%	3.71%	1.64%	−10.85%	−0.76%
	Other	10.82%	6.37%	7.44%	7.18%	6.14%	0.21%	6.36%
Hitachi		2003	2004	2005	2006	2007	2008	Average
	Informetion & Telecommunication Systems	33.15%	21.48%	25.94%	23.19%	29.54%	96.16%	38.24%
	Electronic Devices	14.42%	11.73%	6.26%	17.58%	13.75%	14.87%	13.10%
	Power & Industrlal Systems	16.09%	23.35%	28.35%	13.98%	35.23%	13.20%	21.70%
	Digital Media & Consumer Products	3.30%	2.76%	−10.96%	−22.46%	−27.96%	−57.47%	−18.80%
	High Functional Materials & Comonents	22.17%	27.74%	33.71%	50.88%	35.88%	15.12%	30.92%
	Logistics, Services & Others	0.25%	3.11%	5.98%	7.78%	7.09%	12.56%	6.13%
	Flnancial Services	10.61%	9.85%	10.72%	9.04%	6.48%	5.56%	8.71%

Note : The table includes intersegment sales and does not consider "eliminations"
Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

automotive products, construction machinery, railway vehicles, and so on) occupied top positions in Hitachi's sales and capital expenditure, its information & telecommunication system and high functional materials & components segments held the top positions in operating profit, that is if the financial segment is not considered as it requires a different accounting rule than manufacturing.

Table 3 Capital Expenditure (%) and Total Asset/Employee Ratio (in millions yen) by Business Segments

Capital expenditure	Year	2003	2004	2005	2006	2007	2008	Average
Toshiba	Dlgital Products	19.08%	10.66%	12.18%	8.04%	7.80%	9.34%	11.18%
	Electronic Devices	53.47%	69.87%	66.00%	71.67%	70.53%	58.44%	65.00%
	Soclal Infrastructure	10.84%	10.69%	12.15%	12.58%	13.99%	21.26%	13.58%
	Home Appllances	7.58%	6.42%	7.55%	5.34%	4.96%	5.03%	6.15%
	Other	9.03%	2.36%	2.12%	2.37%	2.71%	5.93%	4.09%
Hitachi		2003	2004	2005	2006	2007	2008	Average
	Informetion & Telecommunication Systems	9.77%	10.46%	12.53%	14.15%	10.10%	8.01%	10.84%
	Electronic Devices	4.71%	4.78%	3.64%	3.15%	2.58%	3.77%	3.77%
	Power & Industrlal Systems	8.53%	9.99%	10.86%	13.81%	15.90%	21.66%	13.46%
	Digital Media & Consumer Products	3.80%	3.90%	3.92%	7.56%	8.94%	5.32%	5.57%
	High Functional Materials & Comonents	7.43%	7.67%	8.60%	8.35%	10.40%	12.85%	9.22%
	Logistics, Services & Others	3.48%	3.16%	2.45%	2.57%	3.76%	3.87%	3.22%
	Flnancial Services	62.26%	60.04%	58.01%	50.42%	48.31%	44.53%	53.93%

Total asset/ employee	Year	2003	2004	2005	2006	2007	2008	Average
Toshiba	Dlgital Products	20.82	22.56	24.50	27.21	26.40	20.00	23.58
	Electronic Devices	35.68	38.30	39.78	41.58	44.12	40.88	40.06
	Social Infrastructure	42.91	27.49	27.74	35.42	33.36	32.73	33.27
	Home Appllances	20.16	17.52	16.29	16.15	15.64	14.29	16.68
	Other	15.71	56.20	47.16	38.91	30.99	26.87	35.97
Hitachi		2003	2004	2005	2006	2007	2008	Average
	Informetion & Telecommunication Systems	19.61	19.60	20.41	20.23	19.07	17.10	19.34
	Electronic Devices	35.80	32.32	31.51	29.14	29.78	23.49	30.34
	Power & Industrlal Systems	28.67	27.87	28.11	28.16	31.75	29.09	28.94
	Digital Media & Consumer Products	24.87	22.98	26.87	26.79	24.87	19.18	24.26
	High Functional Materials & Comonents	24.43	23.64	24.94	28.13	29.96	24.93	26.00
	Logistics, Services & Others	35.33	32.48	33.65	35.88	32.88	34.40	34.27
	Flnancial Services	496.37	528.26	547.50	623.93	582.09	585.29	560.57

Note : The table includes intersegment sales and does not consider "eliminations"
Source: Toshiba and Hitachi, *Yuka-shoken-hokokusho*, various years

When comparing Toshiba and Hitachi, the key difference that emerges is that, while Toshiba was increasing its commitment to two business segments, electronics devices and the social infrastructure, Hitachi reflected less disparity within its manufacturing segments in terms of performance and investment, although the information & telecommunication system segment could be considered as the traditional financial performance driver within its business structure. To verify the factors that produced these results over the period, one needs to explore their respective corporate strategies.

V. Different Approaches Taken to Corporate Reform

1. Toshiba Reorganization: "Focusing and Selecting"

Entering into the new century, both firms recognized the need for action and took on corporate reform in earnest. Toshiba CEO Taizo Nishimuro (tenure: 1996–2000) launched a thorough process of corporate reform, under a corporate policy and plan that called for "Focusing and Selecting" on the basis of profitability[xvi]. New CEO Tadashi Okamura (tenure: 2000–2005) then succeeded Nishimuro's basic reform policy with some modification, introducing a new mid-term plan called "01 Action Plan," which led the corporate reform from year 2000 onwards.

In response to the bursting of the IT bubble, Okamura redefined the areas of business as either (1) rapid growth or (2) consistent growth. He accomplished this by shifting away from a previous overemphasis on IT business to a more balanced investment in both rapid and consistent growth business groups. The rapid growth business included digital media, mobiles, semiconductors, LCDs, solutions and platforms, and consistent growth came from social infrastructure, medical systems, power systems and home appliances[xvii]. While spinning off five divisions in response to the national commercial law reform, some products such as NAND memories and medical equipment grew and contributed to the growth[xviii].

His successor, Atsutoshi Nishida (tenure: 2005–2009) went a step further by introducing a strategy of two core business fields. To strategically allocate its resources, Toshiba defined its core business as (1) semiconductors, used to attain high yet unstable profits, and (2) the nuclear power business, to generate stable, long-term profits. The intention was to attain stable profitability as a whole for the period[xix]. The investment in electric devices, especially NAND memory, and the acquisition of nuclear business, Westinghouse Electric Company in 2006, are representative of each. Through these corporate reforms, business and profitability growth progressed in the 2000s, up until the Lehman Shock in 2008. The investment trajectory analysis presents the strategy for the 2000s where investment in facilities ratio increase from active capital investment while the other two ratios decrease arising from the virtuous cycle of investment and performance.

2. Hitachi Reorganization: "Conglomerate Premium"

Meanwhile Hitachi's corporate strategy during the 2000s was championed by Etsuhiko Shoyama (tenure: 1999–2006) and Kazuo Furukawa (tenure: 2006–2009). Hitachi had started reforming itself in 1999 with a core concept, the "i.e. (information & electronics) social system corporation"[xx]. CEO Shoyama introduced Hitachi Plan I & II, the first time for the firm to publically announce such plans[xxi]. Although a similar emphasis was placed on the importance of the information & electronics business, the Hitachi plans pursued concepts different from that of Toshiba, such as synergy, conglomerate premium, business start-ups, strength of technology[xxii], and bottom-up revival[xxiii].

Hitachi Plan I aimed at "increasing 7.5% in ROE by 2003 Mar through raising the level of IT related business sales to 70% and withdrawing from unprofitable business[xxiv]." In 2003, Hitachi Plan II was announced with higher objectives, including 8% ROE and withdrawing from 20% of its business by March 2005. Some representative actions during the period include the establishment of Elpida Memory (NEC Hitachi Memory), through a merger of its DRAM business with NEC in 1999, the acquisition of HDD business from IBM, and the establishment of Renesas Technology with Mitsubishi Electric in 2003. Although these plans were not fully completed, they did provide opportunities for the reform of the electric/electronics industry in some business fields.

After failing to achieve the goal of Hitachi Plan II, another policy was launched in 2006, with a central theme of "collaborative creation and profits" and a rigorous focus on a market-orientation[xxv]. Searching to cooperate with others[xxvi], Hitachi placed emphasis on the social infrastructure business by increasing its related capital investment, while it also invested in digital media & consumer products, such as flat panel televisions. This saw Hitachi increase its performance in the social infrastructure business, by investing, for example, in high-speed rail in the UK and fossil fuel power plants in other EU countries. In the end, digital media & consumer products did not recover, ultimately holding back the entire performance of Hitachi. These corporate reforms contributed to business growth in the 2000s, again up until the Lehman Shock in 2008. The investment trajectory analysis in the 2000s reveals decreases in two investment ratios (R&D and Marketing et al), more due to the fact that total revenue kept increasing while the two were maintained at constant levels of investment, with the third category of investment keeping pace with revenue growth to a certain degree. Unlike the case for Toshiba, however, the overall relation of investment and performance reflects a less positive outcome.

3. "Selecting and Focusing" or "Focusing without Selecting"

Distinct characteristics are revealed when one considers the corporate strategies and representative behaviors of both firms. Both firms were faced with similar motivations, which included the financial environment, IT business challenges and a necessity for corporate reform through the pursuit of selecting and focusing strategies. Toshiba has more strictly implemented its selecting and focusing strategy, in terms of profitability, and established a virtuous cycle between investment and performance. On the other hand, Hitachi has tried to execute its "selecting and focusing" strategy with consideration of its synergies and strengths of technology, and this resulted with less selective focusing. The point of divergence is not so much in the "what" each was doing but more in the "how", at least in terms of their approaches to "selecting and focusing".

VI. Conclusion

Using the case of Toshiba and Hitachi, this article has sought to explore and define the differences and identify the turning point of divergence between two significant Japanese manufacturing firms. This analysis informs on when and how firms within the same industrial grouping can differentiate due to courses taken in their investment strategies and corporate responses.

This article proposes 2003 as the turning point of differentiation between Toshiba and Hitachi[xxvii]. Up until 2003, both generally took quite similar trajectories in spite of differences in their respective investment patterns. However, subsequent to 2003, Toshiba recovered to achieve a positive net income margin while its investment ratio, although monetarily lower, was at a relatively higher rate. Conversely, Hitachi struggled to return to profitability, although it has recently recovered to a certain extent.

Beyond the trajectories, the study then delves deeper to identify differences in management policies and strategies between the two firms. Toshiba maintained a consistent strategy that was founded on group management, first in "selecting and focusing" and subsequently through "management based on two core business groups." Hitachi, on the other hand, pursued on alternate form of "selecting and focusing" that centered on "conglomerate premium." The resulting data on investment and performance by segment support the findings of the study.

Previous research suggests that Japanese corporations need to free themselves from "investment restraint mechanisms," which have been widespread since the bursting of the bubble economy. Although it is generally and quantitatively true that investment restraint has been a widespread practice in such corporations, this article proposes an additional consideration that can be derived from the cases studied. Undoubtedly both Toshiba and Hitachi generally restrained investment during the 1990s and 2000s. However, Toshiba's case indicates that a corporation can successfully concentrate its constrained investment through a strict "selecting and focusing" strategy of top-down revival, a necessity that arose due to a lack of available sources of funds to support the entire business holdings during the Lost Decades. Hitachi, on the other hand, aims to achieve conglomerate premium, by concentrating on its technological strength and through a bottom-up revival; although not yet realized, and there is still some uncertainty as to whether this will lead to the desired outcome, it provides an alternative means of coping with an environment of investment constraint.

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[i] Kikkawa [2005, 2006, 2010]. He reviews works on both Japanese success and failure, and confirms that the research on success does not explain the failure period, and the research on failure does not capture the entire picture of the Japanese economic and corporate system. He suggests the necessity for a consistent logic, to explain all periods, success and failure, to support solutions for the present Japanese economy. See more detail in Kikkawa [2010]. The phrase "financial system" includes both financial institutions, such as banks, and the financial departments of industrial companies. However, some researchers have cast doubt on his interpretation, such as Taniguchi [2010] and Abe [2011]. He contends that the Japanese manufacturing system has, in fact, also been challenged although there is no doubt the financial system faced much more of a crisis and pressure to reform.

[ii] Yonekura, Nobeoka, and Aoshima [2010], p. 17. Aside from the automobile and steel industries, the organic chemical industry has also maintained competitiveness.

[iii] The Phenomenon of investment restrain in Japanese company is also identified by economics studies while discussing the importance of investment for national economic growth, such as Suzuki [2001] (especially chapter 1).

[iv] Kikkawa [2000], p. 205.

[v] Kikkawa [2010], p. 22. Japanese-style management is defined as management which is based on cooperative

labor-management relations that support maximizing the employee's profit. And the greatest merit of this style is that it realizes the correspondence between employee's and stakeholder's interests, through appropriately pursuing necessary investments with a long-term horizon in order to realize both the growth of the firm and the rise of stock value.

[vi] Previous research has confirmed the unique industrial economic structure in Japan. Porter [1992], for instance, suggests that two contrary industrial sectors coexisted in Japan, the one group of industry that maintains international competitiveness while facing high domestic competition, the other having little international competitiveness and no domestic competition. Taking the indication of Porter' research and combining it with business history research in Japan, such as Morikawa [1995], Udagawa, Kikkawa, and Shintaku [2000] focus on corporate behavior and domestic competition in industry or product, and analyze the remaining issues of Porter's research. However, this research is limited in explaining the Japanese economic and corporate situation covering 2000s.

[vii] Aoshima, Takeishi, and Cusumano [2010], Chapter 2.

[viii] Yonekura, Nobeoka, and Aoshima [2010], p. 18.

[ix] Kagono [2004], p. 5.

[x] Onishi and Ohashi [1990], p. I.

[xi] Comparing Toshiba's "issue to be solved" section in the annual securities reports between 1997 to 2001, with those of Hitachi, Toshiba more concretely mentioned the corporate reform plan such as reducing its assets, employees, and plan.

[xii] Similar results are obtained with unconsolidated data. Therefore in terms of performance and investment data, 2000s is the divergent point for both firms either consolidated or unconsolidated.

[xiii] Since generally it is considered that investment as an actual behavior is derived from strategy e.g. a conceptual plan; in other words, investment serves as one proxy of organizational response. This approach, Investment Trajectory Analysis, is useful for tracking both companies' responses during the periods, even though impacted to certain degrees by the macro-economic environment. See Miyata [2010, 2011] on this approach.

[xiv] Toshiba, *Annual Report*, 2003, pp. 4–5.

[xv] Details on Hitachi's seven business segments: "Information & Telecommunication Systems" segment's main products and services consist of, systems integration, outsourcing services, software, HDD, disk array subsystems, servers, mainframes, PCs, telecommunications equipment, and ATMs. "Electronic Devices" main products and services consist of, LCDs, semiconductor manufacturing equipment, test and measurement equipment, medical electronics equipment, and semiconductors. "Power & Industrial Systems" main products and services consist of, nuclear power plants, thermal power plants, hydroelectric power plants, industrial machinery and plants, automotive products, construction machinery, elevators, escalators, railway vehicles, and air conditioning equipment. "Digital Media & Consumer Products" main products and services consist of, optical disk drives, TVs, plasma displays, LCD projectors, mobile phones, room air conditioners, refrigerators, washing machines, information storage media, and batteries. "High Functional Materials & Components" main products and services consist of, wires and cables, copper products, semiconductor materials, circuit boards and materials, organic and inorganic chemical products, synthetic resin products, LCD materials, specialty steels, magnetic materials, malleable cast-iron products, and forged and cast-steel products. "Logistics, Services & Others" main products and services consist of, general trading, logistics, and property management. "Financial Services" main products and services consist of, leasing, loan guarantees, and insurance services.

Details on Toshiba's 's five business segments: "Digital Products" segments' main products and services consist of, mobile phone, DVD player, PCs, HDD, TVs. "Electronics Devices" main products and services consist of, semiconductor, flash memory, LSI, SED, LCD, DMFC, and OLED. "Social Infrastructure" main products and services consist of, nuclear power plants, thermal power plants, hydroelectric power plants, pyrolysis systems, media storage servers, broadcasting and networks systems, IT solution, diagnostic x-ray systems, CT, MRI, elevators, and escalators. "Home Appliances" main products and services consist of, lamp and lighting, batteries, refrigerators, microwave ovens, IH cooking heater, rice cooker, kitchen appliances, washer dryer, irons, vacuum cleaners, dish washers, electronic waste composter, air conditioners, air cleaners, electric fans, humidifier dehumidifier, health and beauty appliances, ventilation fan door phone, built -in equipment, home networking appliances. "Other" main products and services consist of, real estate, and property management.

[xvi] Taniguchi and Hasegawa [2008], pp. 176–177.

[xvii] Toshiba, *Annual Report*, 2002, pp. 3–4.

[xviii] Taniguchi and Hasegawa [2008], pp. 178–179.

[xix] Osada [2010], pp. 104–105 p.147.

[xx] *Nikkei Business*, 2002, pp. 36–37.

[xxi] *Nikkei Business*, 2008, pp. 35.

[xxii] *Nikkei Business*, 2002, pp. 36–37.

[xxiii] Mizuno [2004], pp. 3–5.

[xxiv] *Nikkei Business*, 2008, pp. 36.

[xxv] Hitachi, Annual Report, 2007, p. 4.

[xxvi] *Nikkei Business*, 2008, pp. 41.

[xxvii] In using unconsolidated data, it confirms that 2001 is the turning point for both firms, and actually identifies more unique and sharp differences that exist between them. Toshiba focuses investment in manufacturing and stable R&D and less in marketing, while Hitachi pursues less investing in manufacturing, R&D, and places more emphasis on marketing. Regardless of whether data is consolidated or unconsolidated, the early 2000s serve as the turning point for the two firms.