

Analysis of loss-making corporations using corporate tax returns*

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Abstract

This paper reports the results of the analysis using the universe of the corporate tax return to show distributions of income or loss amounts and corporate income tax amounts by attributes such as capital amount, industry and family or non-family classification, and to analyze the distribution of tax loss carryforwards and other measures. Our data come from the tax returns during FY2014 to 2020. We construct panel data set considering mergers, multiple filing in a single year and missing information.

The results using our full sample, excluding consolidated corporations, foreign corporations and corporations that are closed or in liquidation, are as follows. The distribution of income or loss amounts, which are not published in the Corporation Sample Survey, suggests that noticeable bunching at the point where income is exactly 0 yen. Corporations resulting in zero loss amounts are more prevalent among corporations with capital of 100 million yen or less and less prevalent among corporations with capital of over 100 million yen. Corporations that became loss-making corporations for seven consecutive years account for approximately 36.5% of all corporations, with the proportion increasing with smaller capital. Only 1.1% of all corporations apply a loss carryforward deduction for seven consecutive years, while 21.2% of all corporations do not apply a loss carryforward deduction at all in seven consecutive years. We examine the transition between fiscal years for corporations with capital of over 100 million yen and those with capital of less than 100 million yen. The transition probability for corporations with capital of over 100 million yen that reduce their

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capital to 100 million yen or less in the next fiscal year ranges from just under 4% to just over 5%. On the other hand, the transition probability for corporations with capital of 100 million yen or less that increase their capital to more than 100 million yen in the next fiscal year is extremely low. Loss-making corporations have a higher probability of reducing their capital to 100 million yen or less in the next fiscal year than profit-making corporations. We clarify the number of corporations by corporate tax amount bracket to show that corporations paying over 5 million yen in corporate tax, whose share is approximately 5%, account for approximately 95% of all corporate tax. We also find that the larger the capital size of a corporation, the higher the proportion of corporations paying over 5 million yen.

Keywords: corporate tax, corporate tax return, tax records, loss-making corporations, capital reduction

JEL Classification: H25, H32, M41

I. Introduction

According to the National Tax Agency's "National Tax Agency Annual Statistics Report" and "The Actual State of Corporate Enterprises Seen from the Taxation Statistics (Corporation Sample Survey)," more than 60% of corporations are loss-making corporations. While the number of profit-making corporations by income (profit) class is compiled and published by industry and capital class, the results by loss class are not published, and the distribution of loss amounts is unclear from public statistics. Therefore, while it is possible to estimate the effects of policy changes that increase or decrease income, it is difficult to accurately estimate the effects of policy changes that reduce losses and turn loss-making corporations into profit-making corporations from public statistics. Examples of such system changes include changes in loss carryforwards. The loss carryforward system allows losses to be carried forward to subsequent fiscal years and deducted from taxable income, and is thought to be one of the institutional factors reducing corporate tax revenue. Perhaps due to this concern, this system was revised in fiscal years 2011, 2015, and 2016. Its effectiveness is one of the systems in need of further review.

Based on a joint research project with the National Tax College using administrative records held by the National Tax Agency, this paper reports the results of the analysis using full census data in Appended Table 1(1) of the corporate tax return. The purpose of this paper is to use microdata from corporate tax returns to show distributions of income or loss amounts and corporate income tax amounts by attributes, such as capital amount and industry, and to analyze the distribution of tax loss carryforwards and other measures. In particular, the "growth-oriented corporate tax reform" implemented in the 2010s reduced the effective corporate tax rate and expanded the size-based business taxation of the enterprise tax as a means of securing alternative revenue sources.¹ Based on this background, this paper selects and aggregates corporations estimated to be subject to size-based business taxation

(hereinafter, “size-based-taxed corporations”). It also focuses on the differences in the applicability of tax loss carryforwards and tax status between corporations with capital of less than 100 million yen and those with capital of more than 100 million yen, as well as the transition from the latter to the former.

The structure of this paper is as follows. Section II provides an overview of the content and nature of the corporate tax return data used in this paper. Section III summarizes the data, first showing the distribution of corporations by income and loss brackets, and examining the actual state of loss-making corporations, including the distribution of loss amounts. In doing so, we also focus on loss-making corporations with an income of zero yen. Section

Table 1. The Number of Corporations in the Sample

	Unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
Total	2,588,830	2,612,902	2,641,640	2,673,361	2,702,570	2,739,474	2,767,864
Loss-making corporation	1,722,478	1,698,735	1,686,996	1,681,662	1,686,973	1,697,127	1,728,516
Profit-making corporation	866,352	914,167	954,644	991,699	1,015,597	1,042,347	1,039,348
Capital size (yen)							
< 10 mil	2,213,459	2,239,301	2,270,059	2,302,754	2,332,049	2,369,047	2,399,219
between 10 mil and 100 mil	341,908	340,577	338,825	338,020	338,107	338,012	336,451
100 mil	9,277	9,623	10,092	10,547	11,040	11,551	11,982
between 100 mil and 1 bil	17,938	17,300	16,676	16,163	15,572	15,103	14,515
> 1 bil	6,248	6,101	5,988	5,877	5,802	5,761	5,697
Non-family corporation	59,789	60,039	60,474	62,328	62,966	66,272	65,393
Specified family corporation	39,886	35,798	31,836	28,807	26,233	24,137	21,529
Family corporation etc.	2,489,155	2,517,065	2,549,330	2,582,226	2,613,371	2,649,065	2,680,942
Family corporation	2,289,311	2,310,499	2,334,394	2,361,893	2,386,997	2,412,710	2,429,561
Size-based-taxed corporation	20,129	19,386	18,689	18,077	17,426	16,959	16,293
Domestic ordinary corporation (excl. general incorporated association etc)	2,479,945	2,502,219	2,529,111	2,559,394	2,587,757	2,623,631	2,651,862

Shares	2014	2015	2016	2017	2018	2019	2020
Loss-making corporation	66.53%	65.01%	63.86%	62.90%	62.42%	61.95%	62.45%
Profit-making corporation	33.47%	34.99%	36.14%	37.10%	37.58%	38.05%	37.55%
Capital size (yen)							
< 10 mil	85.50%	85.70%	85.93%	86.14%	86.29%	86.48%	86.68%
between 10 mil and 100 mil	13.21%	13.03%	12.83%	12.64%	12.51%	12.34%	12.16%
100 mil	0.36%	0.37%	0.38%	0.39%	0.41%	0.42%	0.43%
between 100 mil and 1 bil	0.69%	0.66%	0.63%	0.60%	0.58%	0.55%	0.52%
> 1 bil	0.24%	0.23%	0.23%	0.22%	0.21%	0.21%	0.21%
Non-family corporation	2.31%	2.30%	2.29%	2.33%	2.33%	2.42%	2.36%
Specified family corporation	1.54%	1.37%	1.21%	1.08%	0.97%	0.88%	0.78%
Family corporation etc.	96.15%	96.33%	96.51%	96.59%	96.70%	96.70%	96.86%
Size-based-taxed corporation	0.78%	0.74%	0.71%	0.68%	0.64%	0.62%	0.59%

Source: Authors' calculation

¹ Japan's corporate tax system consists of three taxes: the corporate tax levied by the central government (this paper uses the tax return for this tax), the corporate resident tax, and the enterprise tax levied by local governments. The corporate resident tax has a nearly identical tax base to that of the corporate tax. The enterprise tax consists primarily of the income component, the value-added component, and the capital component. Taxes levied on corporate income include the corporate tax, the corporate resident tax, and the income component of the enterprise tax. On the other hand, the value-added component is levied on a company's value added, and the capital component is levied on paid-in capital, etc. These are classified as size-based business taxation.

IV analyzes the number of corporate tax amounts by corporate tax bracket. This makes it possible to show the proportion of corporate tax revenue paid by corporations with high corporate tax amounts. Information on the distribution by corporate tax bracket is not disclosed in public statistics.

Section V presents the distribution of loss-making corporations by capital class, focusing on “size-based-taxed corporations” with capital of over 100 million yen. Section VI shows the breakdown by industry. Section VII examines the situation of loss-making corporations, focusing separately on non-family corporations and specified family corporations.

Section VIII shows the distribution of corporations by the number of years they were loss-making corporations and by the number of consecutive years they were loss-making corporations from FY2014 to 2020. In addition, we analyze the transition between profit-making corporations and loss-making corporations between fiscal years (e.g., a corporation that is profit-making in the current fiscal year but becomes loss-making in the following fiscal year), and compare the transition between fiscal years by capital size.

Furthermore, we present the transition between corporations with capital of over 100 million yen and those with capital of less than 100 million yen, and show how their transition changed between fiscal years. In doing so, we consider whether loss-making corporations have reduced their capital in line with their business realities, and whether profit-making corporations have reduced their capital due to the impact of tax system reforms following the growth-oriented corporate tax reforms implemented in the 2010s.

The final section, Section IX, touches on the remaining issues in this paper’s analysis.

II. Data

II-1. Microdata from Corporate Tax Returns

The data used in this paper was constructed from microdata of corporate income tax returns as follows. The data used in this paper is only Appended Table 1(1) of the corporate tax return, and covers all individual domestic corporations that are required to file under the Corporate Tax Act. Individual corporations include domestic and foreign corporations, and domestic corporations include public interest corporations, cooperatives, unincorporated associations, and ordinary corporations. However, this paper does not use any information on consolidated tax payments.

The corporate tax returns used in this paper are those filed on or after the deadline or as amended returns. Returns for fiscal years starting from April 1 to March 31 in the next year are treated as returns of this year, and the analyzed period spans seven years from fiscal years 2014 to 2020.

Due to factors such as changes in a corporation’s business year, a corporation may submit multiple tax returns between April 1st and March 31st in the next year. This means that there may be multiple records within the same fiscal year with the same bureau number and reference number, but with a business year of less than 12 months. In this paper, in order to

construct and analyze “fiscal year” data for each corporation, for duplicate data with a business year of less than 12 months, the industry number, capital amount, blue/white classification, tax return classification, and loss carryforward amount are taken from the last data point within the same business year. Sales amount, income amount, corporate tax amount, loss carryforward deduction amount for the current period are calculated by adding up the duplicate data.²

In addition, in order to make comparisons with the previous year for the same corporation, we processed the data so that the bureau number and reference number were uniquely determined within the same fiscal year. In other words, when multiple corporations merged and the fiscal year boundaries were changed, we adjusted the corresponding data. In other words, for variables other than industry number, capital amount, blue and white classification, and tax return classification, the sum of the merged corporations was calculated, and for industry number, capital amount, blue and white classification, and tax return classification, the values of the surviving corporation were used.

Some corporations have missing information on their corporate tax returns due to the absence of a capital amount entry. Corporations with missing capital amounts are treated as having a capital amount of zero. Regarding the classification of a corporation as a family corporation or non-family corporation, Appended Table 1(1) of the corporate tax return includes a “family or non-family classification” field, where the corporation is entered as a family corporation, specified family corporation, or non-family corporation. However, some corporations also have missing information for this classification. Therefore, we performed the following procedures to impute missing information on capital amounts. First, for corporations whose classification (which is thought to be less likely to change than capital amount) remained unchanged before and after the years in which the data was missing, we imputed the missing data by assuming that the missing year was in the same classification as the preceding and following years. Second, for corporations whose capital amount remained the same before and after the missing years, and whose classification remained unchanged, we imputed the missing data by assuming that the capital amount for the missing year was the same as the preceding and following years.³

² The corporations used in this study are slightly different from those in Doi, Bessho, and Mori (2023). Further examination after Doi, Bessho, and Mori (2023) was published, some inconsistencies were revealed, such as in losses arising from the aggregating of data from multiple returns for the same fiscal year, and as a result, some corporations were excluded from the analysis. In addition, the capital amounts of some corporations were adjusted by referencing the Financial Statements Statistics Survey by Corporations by the Ministry of Finance’s Policy Research Institute, the Basic Survey of Japanese Business Activities by the Ministry of Economy, Trade and Industry, and Nikkei NEEDS corporate and financial data.

³ Naturally, corporations with no capital or investments have a capital amount of 0 yen, but because such corporations have a capital amount of 0 yen in the first place in every fiscal year, this treatment does not supplement capital amounts exceeding 0 yen. Furthermore, even in the family or non-family classification, for corporations whose capital (or investments) are missing in the year prior to the year in which they change and whose figures remain missing after the change, there is no way to supplement these missing figures, so the family or non-family classification is left unknown.

II-2. Overview of the Analyzed Data

Table 1 shows the total number of corporations (excluding consolidated corporations and foreign corporations) for each fiscal year, excluding corporations that are closed or in liquidation after carrying out the processing described in the previous section. In that sense, this paper uses a full census of data of Japanese corporations. Table 1 shows that the number of corporations was approximately 2.59 million in FY2014, which increased over the period, reaching approximately 2.77 million in FY2020.

Of these, how many were loss-making corporations? When divided into loss-making corporations (corporations with negative (loss) or zero income (including cases where income is zero after deducting loss carryforward)) and profit-making corporations (corporations with positive income (profit)), the result is shown in Table 1. The income amount or loss amount here is the income amount after loss carryforward deduction is carried forward (“Income amount or loss amount” in column (1) of Appended Table 1 (1) of the corporate tax return).

The number of loss-making corporations decreased from approximately 1.72 million in FY2014 to approximately 1.68 million in FY2017, but has been increasing since FY2018, reaching approximately 1.73 million in FY2020.

The ratios of these corporations to all corporations in this paper are also shown at the bottom of Table 1 (same below). The proportion of corporations recording losses had been declining from 66.53% in FY2014 to 61.95% in FY2019, but rose to 62.45% in FY2020, when the COVID-19 pandemic hit. This paper examines these loss-making corporations from various perspectives.

Corporations can be classified by capital size into those with capital of 10 million yen or less, between 10 million yen and 100 million yen, 100 million yen, between 100 million yen and 1 billion yen, and over 1 billion yen, as shown in Table 1. Corporations with capital of 10 million yen or less include not only corporations with no capital or investment equity (corporations with capital of 0 yen), but also corporations with missing capital, as mentioned above.

As is already known, the number of corporations with capital of 100 million yen or less is overwhelmingly large, and the results of this paper are similar, with their proportion increasing from 98.71% in FY2014 to 98.84% in FY2020. Conversely, as shown in Table 1, the number of corporations with capital of over 100 million yen has been on a downward trend over this period. Furthermore, while there were reported cases of corporations with capital of over 100 million yen reducing their capital to 100 million yen, the number of corporations with capital of exactly 100 million yen has increased from 9,277 in FY2014 to 11,982 in FY2020.

We calculated the shares of family corporations or non-family corporations from corporate tax returns.⁴ Appended Table 1(1) of the corporate tax return includes a column for “family corporation/non-family corporation classification,” which we use. Corporations that meet certain requirements stipulated in the Corporate Tax Act are deemed to be specified

family corporations.⁵ However, some information is missing from the “specified family corporation/non-family corporation” classification. Therefore, based on the imputation process described above, we classified these corporations as non-family corporations, specified family corporations, and family corporations, etc., as shown in Table 1.⁶ In this paper, “family corporations etc” includes not only family corporations, but also corporations whose classification on the corporate tax return is missing for the current fiscal year. Non-family corporations account for just over 2% of all corporations covered in this paper, while the share of specified family corporations have declined from 1.54% in FY2014 to 0.78% in FY2020, and the number of corporations is also on a downward trend. This shows that the majority of corporations in Japan are family corporations. The number of family corporations accounted for approximately 96% of the total number of “family corporations etc” (including those whose status information is missing) in every fiscal year.

Finally, this paper compiles a list of corporations that are (presumed to be) subject to size-based business taxation as a part of the enterprise tax (based on value-added and capital), whose tax rate was raised in the growth-oriented corporate tax reform in the mid-2010s. These results are shown in Table 1.⁷ As mentioned above, in line with the decrease in corporations with capital of over 100 million yen, the number of corporations subject to size-based business taxation has decreased from 20,129 in FY2014 to 16,293 in FY2020. Furthermore, their proportion to all corporations covered in this paper fell from 0.78% in FY2014 to 0.59% in FY2020.

Table 1 also shows the number of domestic ordinary corporations, excluding corpora-

⁴ A family corporation is a corporation in which the total number of shares or amount of investment held by the top three shareholder groups of a corporation is equivalent to more than 50% of the total number of issued shares or total amount of investment of the corporation.

⁵ A specified family corporation is a corporation in which more than 50% of the total issued shares are controlled by one shareholder group (hereinafter referred to as a “controlled corporation”), and if there is a corporation that is not a controlled corporation among the shareholders, etc. that formed the basis for determining whether the corporation is a controlled corporation, the corporation would still be considered a controlled corporation even if that corporation were excluded from the shareholders, etc. that formed the basis for the determination (excluding controlled corporations whose amount of capital or investment is 100 million yen or less). For business years beginning on or after April 1, 2010, a controlled corporation whose amount of capital or investment is 100 million yen or less will be included in the specified family corporation if it is an ordinary corporation that has a wholly-owned relationship with one of the following corporations:

- (a) A corporation with capital or investment of 500 million yen or more.
- (b) Mutual corporations (including foreign mutual corporations) as defined in the Insurance Business Act.
- (c) Trusted corporations as defined in Article 4-7 of the Corporate Tax Law

⁶ Regarding the supplementary determination of whether a corporation is a family corporation, a specified family corporation, or a non-family corporation, it is difficult to reconstruct the method used in the Corporation Sample Survey, so we follow the method described above, which is therefore different from that used in the Corporation Sample Survey.

⁷ It is not possible to identify corporations subject to the size-based business taxation (size-based-taxed corporations) from their corporate tax returns. Therefore, we select and compile a list of corporations estimated to be size-based-taxed corporations, subject to the size-based business taxation. Of all corporations in this paper, we estimate that corporations with capital exceeding 100 million yen and not engaged in electricity transmission and distribution, pipeline gas supply, life insurance, non-life insurance, small-amount short-term insurance, or trade insurance are size-based-taxed corporations. This is consistent with Doi, Bessho, and Mori (2023). Doi, Bessho, and Mori (2023) compared the size-based-taxed corporations estimated in this paper with the number of size-based-taxed corporations in the Ministry of Internal Affairs and Communications' "Survey on Prefectural Taxation Status" (excluding consolidated tax return filing corporations), and found that the total deviation rate was less than 3% in absolute terms in all years, indicating a high degree of consistency. However, in FY2020, the size-based business taxation was also applied to retail electricity businesses, power generation businesses, specified wholesale supply businesses, and specified gas supply businesses, but this change is not reflected in this paper.

tions that are closed or in liquidation, general incorporated associations and foundations (excluding non-profit corporations as defined in Article 2-9-2 of the Corporate Tax Act), and special corporations (Bank of Japan, stock exchanges, and commodity exchanges), which are the subjects of the Corporation Sample Survey. Doi, Bessho, and Mori (2023) examined the number of corporations and other information on domestic ordinary corporations in order to investigate their discrepancies with the Corporation Sample Survey. However as this is not the purpose of this paper, we do not limit ourselves to domestic ordinary corporations, but instead target all corporations (excluding corporations that are closed or in liquidation, consolidated corporations, and foreign corporations) in this paper.

III. Loss-making Corporations by Income and Loss Class

III-1. Distribution of the Corporations

Table 2 presents the number of corporations in this paper by income bracket. Table 2 also shows the number of loss-making corporations by loss bracket. In the Corporation Sample Survey, only the number of profit-making corporations are published for income brackets, and for loss-making corporations, only the total number of corporations is shown without showing any loss brackets. In this respect, clarifying the number of loss-making

Table 2. The Number of Corporations by Income or Loss Class

All corporations		Unit: corporation						
Loss class	2014	2015	2016	2017	2018	2019	2020	
¥ 1 bil+	755	762	688	619	648	774	1,417	
500 mil+	870	887	858	710	903	1,022	1,593	
200 mil+	3,165	3,146	3,107	2,801	2,914	3,421	5,280	
100 mil+	5,547	5,514	5,436	5,109	5,478	6,109	9,068	
50 mil+	11,168	11,350	11,222	10,509	11,530	12,856	18,757	
20 mil+	35,442	35,864	35,594	34,690	36,905	40,671	58,074	
10 mil+	58,034	59,025	59,721	59,436	62,670	66,366	89,045	
5 mil+	106,818	109,787	110,440	111,051	115,079	118,530	141,363	
3 mil+	116,656	118,635	119,343	119,234	122,292	123,396	131,159	
2 mil+	106,509	108,398	107,967	108,052	110,100	110,424	108,599	
1 mil +	176,929	178,074	178,002	176,981	178,771	179,029	168,188	
between 0 and 1 mil.	372,942	376,960	376,554	375,258	376,817	380,460	351,967	
0	727,643	690,333	678,064	677,212	662,866	654,069	644,006	
Total of loss-making	1,722,478	1,698,735	1,686,996	1,681,662	1,686,973	1,697,127	1,728,516	
Income class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil.	277,204	283,493	288,478	293,546	295,994	299,156	287,051	
1 mil +	105,251	110,446	115,059	119,074	121,347	124,531	131,902	
2 mil+	66,791	71,256	74,722	77,684	79,984	82,117	88,064	
3 mil+	87,105	92,407	97,612	101,252	105,180	108,250	112,942	
5 mil+	109,731	118,421	125,380	131,334	135,950	141,942	142,255	
10 mil+	81,525	87,753	93,412	98,331	102,348	106,811	103,842	
20 mil+	69,473	75,451	80,466	85,059	87,636	91,114	88,012	
50 mil+	30,111	33,007	34,914	37,217	37,661	39,312	38,041	
100 mil+	17,581	19,017	20,089	21,735	22,353	22,626	21,737	
200 mil+	12,309	13,013	13,982	15,078	15,505	15,254	14,760	
500 mil+	4,513	4,902	5,157	5,563	5,808	5,632	5,320	
1 bil+	4,758	5,001	5,373	5,826	5,831	5,602	5,422	
Total of profit-making	866,352	914,167	954,644	991,699	1,015,597	1,042,347	1,039,348	
Total	2,588,830	2,612,902	2,641,640	2,673,361	2,702,570	2,739,474	2,767,864	
Share of loss-making	66.53%	65.01%	63.86%	62.90%	62.42%	61.95%	62.45%	
Share of loss > 0	38.43%	38.59%	38.19%	37.57%	37.89%	38.08%	39.18%	
Share of loss = 0	28.11%	26.42%	25.67%	25.33%	24.53%	23.88%	23.27%	

Source: Authors' calculation

corporations by loss bracket is one of the contributions of this paper.

Table 2 shows that corporations with income of exactly 0 yen account for around 25% of all corporations and around 40% of all loss-making corporations. Corporations with losses exceeding 0 yen accounted for just under 40% of all corporations during the period. The proportion of profit-making corporations is as shown in Table 1. Doi, Bessho, and Mori (2023) confirmed that the distribution of the proportion of loss-making corporations and the number of profit-making corporations during this period is quite consistent between our tabulations and the Corporation Sample Survey.

The distribution of the number of corporations by income and loss brackets shown in Table 2 appears to be noticeably⁸ “bunching” at the point where income is exactly 0 yen in every fiscal year.

It is well known that the proportion of profit-making corporations in Japan is 30-40% of all corporations, and that the proportion of loss-making corporations is 60-70% of all corporations. However, as shown in Table 2, it is less known that corporations with zero income (loss) account for around 25% of all corporations, and around 40% of loss-making corporations. In other words, since corporations with zero income are considered to have positive income for the current fiscal year before applying loss carryforwards, Table 2 shows that corporations with positive income for the current fiscal year before applying loss carryforwards, including profit-making corporations, account for around 60% of all corporations.

What changes occurred in the corporation distribution before and after the loss carryforward deduction was applied? Table 3 shows the distribution of corporations by income bracket based on income before loss carryforwards deduction. Looking at the income brackets before loss carryforward deductions⁹, the number of corporations with income before loss carryforward deductions of exactly 0 yen increased from 16,541 in FY2014 to 20,618 in FY2019, but then decreased to 20,144 in FY2020. However, in terms of composition, this represents only around 0.7%. In other words, corporations with income before loss carryforwards deduction of exactly 0 yen are rare. Furthermore, the percentage of corporations with positive income before loss carryforwards deduction was just over 60% in each fiscal year.

Table 4 shows the number of corporations obtained by subtracting the number of corporations by income amount group shown in Table 3 from the number of corporations by income amount group shown in Table 2. Table 3 shows the number of corporations by income amount group before loss carryforwards deduction, while Table 2 shows income (income amount) after loss carryforwards deduction. Note that Table 4 simply compares the number of corporations for each income amount group, regardless of whether it is before or after

⁸ Needless to say, whether or not a bunching exists needs to be examined using appropriate econometric methods.

⁹ Strictly speaking, based on Appended table 4 of the corporate tax return, income is calculated after deducting losses carryforwards or disaster losses for the current period, and then adding or subtracting special deductions for new mineral deposit exploration expenses or overseas new mineral deposit exploration expenses, and the amount of the agricultural management foundation strengthening reserve fund. However, the amount of additions or deductions after deducting losses carryforwards or disaster losses for the current period is not listed in Appended table 1 of the corporate tax return, and therefore cannot be used in this paper. Therefore, in this paper, income before loss deduction is defined as the amount of income or loss listed on Appended table 1(1) of the corporate tax return plus the current deduction amount (positive amount) for losses carryforwards or disaster losses.

Table 3. The Number of Corporations by Income before Loss Carryforward Deduction

All corporations
Loss class (before loss carryforward deduction) Unit: corporation

	2014	2015	2016	2017	2018	2019	2020
¥ 1 bil+	755	762	688	619	648	774	1,417
500 mil+	870	887	858	710	903	1,022	1,593
200 mil+	3,165	3,146	3,107	2,801	2,914	3,421	5,280
100 mil+	5,547	5,514	5,436	5,109	5,478	6,109	9,068
50 mil+	11,168	11,350	11,222	10,509	11,530	12,856	18,757
20 mil+	35,442	35,864	35,594	34,690	36,905	40,671	58,074
10 mil+	58,034	59,025	59,721	59,436	62,670	66,366	89,045
5 mil+	106,818	109,787	110,440	111,051	115,079	118,530	141,363
3 mil+	116,656	118,635	119,343	119,234	122,292	123,396	131,159
2 mil+	106,509	108,398	107,967	108,052	110,100	110,424	108,599
1 mil +	176,929	178,074	178,002	176,981	178,771	179,029	168,188
between 0 and 1 mil.	372,942	376,960	376,554	375,258	376,817	380,460	351,967
0	16,541	16,825	17,406	18,916	19,987	20,618	20,144
Total of loss >= 0	1,011,376	1,025,227	1,026,338	1,023,366	1,044,094	1,063,676	1,104,654
Income class (before loss carryforward deduction)							
between 0 and 1 mil.	540,025	539,487	541,354	541,107	538,733	535,689	489,999
1 mil +	230,409	228,067	230,454	233,890	233,648	236,224	257,127
2 mil+	142,450	141,186	143,124	146,411	147,342	149,260	166,045
3 mil+	171,159	170,438	173,812	177,809	180,671	183,351	193,884
5 mil+	191,239	193,232	197,578	204,760	207,991	213,688	212,397
10 mil+	125,660	129,047	133,535	139,037	141,284	145,683	140,092
20 mil+	94,313	98,967	103,605	108,576	110,015	112,555	108,018
50 mil+	37,214	39,720	41,787	44,268	44,162	45,530	43,961
100 mil+	20,665	22,053	23,021	25,015	25,190	25,192	24,190
200 mil+	13,996	14,600	15,599	16,773	17,000	16,680	16,071
500 mil+	5,034	5,420	5,650	6,097	6,221	6,018	5,682
1 bil+	5,290	5,458	5,783	6,252	6,219	5,928	5,744
Total of income > 0	1,577,454	1,587,675	1,615,302	1,649,995	1,658,476	1,675,798	1,663,210
Total	2,588,830	2,612,902	2,641,640	2,673,361	2,702,570	2,739,474	2,767,864
Share of income <= 0	39.07%	39.24%	38.85%	38.28%	38.63%	38.83%	39.91%
Share of income < 0	38.43%	38.59%	38.19%	37.57%	37.89%	38.08%	39.18%
Share of income = 0	0.64%	0.64%	0.66%	0.71%	0.74%	0.75%	0.73%
Share of income > 0	60.93%	60.76%	61.15%	61.72%	61.37%	61.17%	60.09%

Source: Authors' calculation

loss carryforwards deduction.

Table 4 shows that for loss classes with losses greater than zero, there is no change in the number of corporations in Tables 2 and 3. This is because corporations with negative income before loss carryforward deduction cannot apply the loss carryforwards deduction at that stage, and the loss amount becomes the loss after the loss carryforwards deduction. In contrast, corporations with positive income before loss carryforward deduction can apply the loss carryforwards deduction depending on the amount of applicable carryforward losses, and on whether their income after the loss carryforwards deduction is less than their income before the loss carryforwards deduction. Therefore, in Table 4, for corporations with positive income after the loss carryforwards deduction (i.e., profit-making corporations), the number of corporations in Table 3 is higher than that in Table 2 for each income class. Even if the maximum loss carryforwards deduction is applied, the income after the loss carryforwards deduction will only reach exactly zero, so the number of corporations with income of exactly zero increases after the loss carryforwards deduction. This explains the bunching mentioned above.¹⁰

Table 4. Changes in the Number of Corporations due to Loss Carryforward Deduction

All corporations		Unit: corporation						
Loss class	2014	2015	2016	2017	2018	2019	2020	
¥ 1 bil+	0	0	0	0	0	0	0	
500 mil+	0	0	0	0	0	0	0	
200 mil+	0	0	0	0	0	0	0	
100 mil+	0	0	0	0	0	0	0	
50 mil+	0	0	0	0	0	0	0	
20 mil+	0	0	0	0	0	0	0	
10 mil+	0	0	0	0	0	0	0	
5 mil+	0	0	0	0	0	0	0	
3 mil+	0	0	0	0	0	0	0	
2 mil+	0	0	0	0	0	0	0	
1 mil +	0	0	0	0	0	0	0	
between 0 and 1 mil.	0	0	0	0	0	0	0	
0	711,102	673,508	660,658	658,296	642,879	633,451	623,862	
Total of loss >= 0	711,102	673,508	660,658	658,296	642,879	633,451	623,862	
Income class								
between 0 and 1 mil.	-262,821	-255,994	-252,876	-247,561	-242,739	-236,533	-202,948	
1 mil +	-125,158	-117,621	-115,395	-114,816	-112,301	-111,693	-125,225	
2 mil+	-75,659	-69,930	-68,402	-68,727	-67,358	-67,143	-77,981	
3 mil+	-84,054	-78,031	-76,200	-76,557	-75,491	-75,101	-80,942	
5 mil+	-81,508	-74,811	-72,198	-73,426	-72,041	-71,746	-70,142	
10 mil+	-44,135	-41,294	-40,123	-40,706	-38,936	-38,872	-36,250	
20 mil+	-24,840	-23,516	-23,139	-23,517	-22,379	-21,441	-20,006	
50 mil+	-7,103	-6,713	-6,873	-7,051	-6,501	-6,218	-5,920	
100 mil+	-3,084	-3,036	-2,932	-3,280	-2,837	-2,566	-2,453	
200 mil+	-1,687	-1,587	-1,617	-1,695	-1,495	-1,426	-1,311	
500 mil+	-521	-518	-493	-534	-413	-386	-362	
1 bil+	-532	-457	-410	-426	-388	-326	-322	
Total of income > 0	-711,102	-673,508	-660,658	-658,296	-642,879	-633,451	-623,862	

Source: Authors' calculation

In each fiscal year, the number of corporations whose income (loss amount) became zero after loss carryforward deductions reached over 600,000. The number of corporations in Table 4 can be considered a net increase in loss-making corporations, in the sense that they become loss-making corporations after loss carryforward deductions (where the loss amount becomes exactly zero). The net increase in loss-making corporations is the same as the net decrease in corporations whose income amount before loss carryforward deductions are positive. Table 4 shows that of this net increase of over 600,000, approximately half are corporations whose income before loss carryforwards deduction is between zero and 2 million yen.

When the growth-oriented corporate tax reform was implemented, the limit on loss carryforwards was changed as a measure to secure alternative sources of revenue in response to the reduction in tax revenue due to the reduction in the effective corporate tax rate. As shown in Table 5, loss carryforwards are applied differently to corporations with capital of

¹⁰ In Doi, Bessho, and Mori (2023), in the table corresponding to Table 4 (Table 23 in Doi, Bessho, and Mori (2023)), the difference between the loss amount classes exceeding 0 yen was a positive value, which is impossible under the corporate tax system. As mentioned in footnote 1, this was caused by inconsistencies in losses, etc., that arose from the aggregation of data from multiple returns for the same fiscal year, and this has been corrected in this paper.

Table 5. Limits of Loss Carryforward Deduction

		-FY2011	FY2012 - 2014	FY2015	FY2016	FY2017	FY2018-
Capital > 100 mil yen	Limit	100%	80%	65%	60%	55%	50%
	Periods	7 years	9 years *1	9 years	9 years	9 years	10 years
Capital <= 100 mil yen	Limit	100%	100%	100%	100%	100%	100%
	Periods	7 years	9 years *1	9 years	9 years	9 years	10 years

Note: Limit is a ratio to income before loss carryforward deduction.

Since FY2015, these are not applied to venture corporations and those under management reconstruction

(*1) Applied to losses created after FY2008

Source: Created by authors

over 100 million yen and corporations with capital of less than 100 million yen. The 2011 corporate tax reform, which had allowed corporations with capital of over 100 million yen to fully deduct losses for the seven years prior, limited the deduction limit to 80% of income before carryforwards deduction starting from FY2012. Furthermore, the growth-oriented corporate tax reform in the mid-2010s reduced the limit on loss carryforwards for corporations with capital of over 100 million yen to 65% of income before carryforwards in 2015, 60% in FY2016, 55% in FY2017, and 50% from FY2018 onwards. Corporations with capital of 100 million yen or less will continue to be able to deduct loss carryforwards for up to 100% of their income.

Taking this into consideration, it is conceivable that there will be differences in the application of loss carryforwards deductions between corporations with capital of over 100 million yen and corporations with capital of less than 100 million yen.

Therefore, we look at the distribution of corporations by income bracket, similar to Tables 2 and 3, focusing only on corporations with capital of over 100 million yen. Table 6 presents the number of corporations by income bracket after deducting loss carryforwards, focusing only on corporations with capital of over 100 million yen. Table 6 shows that for corporations with capital of over 100 million yen, loss-making corporations accounted for around 25% of the total until FY2019, rising to just over 30% in FY2020. This is significantly lower than the percentage of loss-making corporations shown in Table 2, which covers all corporations. On the flip side, the percentage of profit-making corporations exceeded 70% except for FY2020. Furthermore, we can see that loss-making corporations, with losses of exactly 0 yen, are rare, at around 2%. The total number of corporations has remained at around 6,000.

Table 6 should also reflect the trends from growth-oriented corporate tax reforms of the mid-2010s, when the upper limit on loss carry-forward deductions was reduced for corporations with capital of over 100 million yen. However, it cannot be said that the reduction in the upper limit on loss carry-forward deductions immediately had a significant impact on the proportion of corporations that recorded profits.

Table 7 shows the distribution of corporations by income bracket before loss carryforward deductions, focusing only on corporations with capital of over 100 million yen. According to Table 7, there are around 5,000 corporations whose income amount before loss carryforward deductions is negative (whose loss is positive), accounting for only around

Table 6. The Number of Corporation with Capital of over 100 Million Yen

Corp with capital of over 100 million yen		Unit: corporations						
Loss class	2014	2015	2016	2017	2018	2019	2020	
¥ 1 bil+	358	341	314	277	295	367	622	
500 mil+	285	273	267	203	286	309	404	
200 mil+	718	658	622	586	564	714	862	
100 mil+	636	712	685	676	770	777	849	
50 mil+	757	712	730	702	729	835	806	
20 mil+	949	880	823	821	818	840	866	
10 mil+	589	508	462	464	466	468	456	
5 mil+	441	362	370	317	364	335	332	
3 mil+	242	174	191	203	183	193	206	
2 mil+	153	126	113	114	106	92	89	
1 mil +	175	165	156	136	137	141	136	
between 0 and 1 mil.	282	259	249	240	198	183	170	
0	683	676	624	622	563	534	520	
Total of loss >= 0	6, 268	5, 846	5, 606	5, 361	5, 479	5, 788	6, 318	
Income class								
between 0 and 1 mil.	664	528	422	334	315	318	259	
1 mil +	536	506	439	444	411	423	415	
2 mil+	348	283	222	222	218	192	186	
3 mil+	521	449	362	381	335	297	280	
5 mil+	945	793	754	682	616	587	504	
10 mil+	1, 188	1, 044	939	856	860	764	701	
20 mil+	1, 864	1, 785	1, 697	1, 609	1, 483	1, 427	1, 346	
50 mil+	1, 696	1, 712	1, 629	1, 617	1, 434	1, 422	1, 297	
100 mil+	1, 993	2, 053	2, 018	1, 859	1, 737	1, 703	1, 565	
200 mil+	2, 958	2, 951	2, 995	2, 889	2, 747	2, 555	2, 283	
500 mil+	1, 876	1, 993	2, 022	2, 008	2, 043	1, 891	1, 716	
1 bil+	3, 329	3, 458	3, 559	3, 778	3, 696	3, 497	3, 342	
Total of income > 0	17, 918	17, 555	17, 058	16, 679	15, 895	15, 076	13, 894	
Total	24, 186	23, 401	22, 664	22, 040	21, 374	20, 864	20, 212	
Share of income <= 0	25.92%	24.98%	24.74%	24.32%	25.63%	27.74%	31.26%	
Share of income < 0	23.09%	22.09%	21.98%	21.50%	23.00%	25.18%	28.69%	
Share of income = 0	2.82%	2.89%	2.75%	2.82%	2.63%	2.56%	2.57%	
Share of income > 0	74.08%	75.02%	75.26%	75.68%	74.37%	72.26%	68.74%	

Source: Authors' calculation

20%. Furthermore, there are almost no corporations whose income before loss carryforward deductions is exactly 0 yen, except for around 50 corporations, or less than 0.3%.

Table 8 shows the number of corporations by income bracket shown in Table 6, based on income after loss carryforward deductions (income amount), minus Table 7, showing the number of corporations by income bracket based on income before loss carryforward deductions, for corporations with capital of over 100 million yen. As shown in Table 4, there is no difference between Tables 6 and 7 for corporations with losses exceeding zero, so these are not included here. Table 8 presents that, although their income before loss carryforward deductions was positive and their income decreased due to the application of loss carryforward deductions, a considerable number of corporations did not become loss-making corporations and remained profit-making corporations (with positive income amounts). This suggests the institutional impact of limiting loss carryforward deductions to corporations with capital of over 100 million yen.¹¹

Table 7. The Number of Corporations by Income before Loss Carryforward Deduction: with Capital of over 100 Million Yen

Corp with capital of over 100 million yen		Unit: corporations						
Loss class (before loss carryforward deduction)	2014	2015	2016	2017	2018	2019	2020	
¥ 1 bil+	358	341	314	277	295	367	622	
500 mil+	285	273	267	203	286	309	404	
200 mil+	718	658	622	586	564	714	862	
100 mil+	636	712	685	676	770	777	849	
50 mil+	757	712	730	702	729	835	806	
20 mil+	949	880	823	821	818	840	866	
10 mil+	589	508	462	464	466	468	456	
5 mil+	441	362	370	317	364	335	332	
3 mil+	242	174	191	203	183	193	206	
2 mil+	153	126	113	114	106	92	89	
1 mil +	175	165	156	136	137	141	136	
between 0 and 1 mil.	282	259	249	240	198	183	170	
0	62	63	57	46	49	44	30	
Total of loss before deduction >= 0	5,647	5,233	5,039	4,785	4,965	5,298	5,828	
Income class (before loss carryforward deduction)								
between 0 and 1 mil.	353	318	343	289	279	281	236	
1 mil +	444	405	378	395	375	393	396	
2 mil+	238	225	196	193	188	167	179	
3 mil+	414	402	327	356	306	283	252	
5 mil+	767	752	662	686	638	583	520	
10 mil+	1,099	996	940	856	893	804	691	
20 mil+	2,009	1,885	1,810	1,652	1,477	1,429	1,370	
50 mil+	1,969	1,836	1,681	1,666	1,550	1,517	1,425	
100 mil+	2,226	2,254	2,123	1,969	1,812	1,813	1,644	
200 mil+	3,295	3,251	3,225	3,077	2,914	2,697	2,414	
500 mil+	2,074	2,153	2,184	2,165	2,144	1,985	1,795	
1 bil+	3,651	3,691	3,756	3,951	3,833	3,614	3,462	
Total of income before deduction > 0	18,539	18,168	17,625	17,255	16,409	15,566	14,384	
Total	24,186	23,401	22,664	22,040	21,374	20,864	20,212	
Share of income before deduction <= 0	23.35%	22.36%	22.23%	21.71%	23.23%	25.39%	28.83%	
Share of income before deduction < 0	23.09%	22.09%	21.98%	21.50%	23.00%	25.18%	28.69%	
Share of income before deduction = 0	0.26%	0.27%	0.25%	0.21%	0.23%	0.21%	0.15%	
Share of income before deduction > 0	76.65%	77.64%	77.77%	78.29%	76.77%	74.61%	71.17%	

Source: Authors' calculation

Figure 1 illustrates the difference in the number of corporations by income bracket between Tables 6 and 7 for FY2020. Subtracting the values in Table 6 from the values in Table 2 gives the number of corporations by income bracket (after losses carryforward are deducted) with capital of 100 million yen or less. Subtracting the values in Table 7 from the values in Table 3 gives the number of corporations by income bracket before loss carryforward deduction are deducted with capital of 100 million yen or less. Using this, the top graph in Figure 1 compares the two, focusing only on corporations with capital of 100 million yen or less. The distribution patterns of corporations in the top graph (capital of 100 million yen or less) and the bottom graph (capital of over 100 million yen) of Figure 1 are significantly dif-

¹¹ In Table 8, only corporations with capital of over 100 million yen are included, but corporations with positive income before loss carryforward deductions but zero income after loss carryforward deductions are considered to be corporations that have undergone a decision to commence reorganization proceedings. The deduction limit for corporations with capital of over 100 million yen to which Article 57, Paragraph 11 of the Corporate Tax Act applies is not the amount specified in Table 5, but the amount of income (i.e., the deduction limit is 100%). Corporations with zero loss amounts in Table 8 are such corporations.

Table 8. Changes in the Number of Corporations due to Loss Carryforward Deduction: with Capital of over 100 Million Yen

Corp with capital of over 100 million yen		Unit: corporations						
Loss class	2014	2015	2016	2017	2018	2019	2020	
0 yen	621	613	567	576	514	490	490	
Total of loss-making corp	621	613	567	576	514	490	490	
Income class								
between 0 and 1 mil.	311	210	79	45	36	37	23	
1 mil +	92	101	61	49	36	30	19	
2 mil+	110	58	26	29	30	25	7	
3 mil+	107	47	35	25	29	14	28	
5 mil+	178	41	92	-4	-22	4	-16	
10 mil+	89	48	-1	0	-33	-40	10	
20 mil+	-145	-100	-113	-43	6	-2	-24	
50 mil+	-273	-124	-52	-49	-116	-95	-128	
100 mil+	-233	-201	-105	-110	-75	-110	-79	
200 mil+	-337	-300	-230	-188	-167	-142	-131	
500 mil+	-198	-160	-162	-157	-101	-94	-79	
1 bil+	-322	-233	-197	-173	-137	-117	-120	
Total of profit-making corp	-621	-613	-567	-576	-514	-490	-490	

Note: The figures are “after deduction” - “before deduction”

Source: Authors' calculation

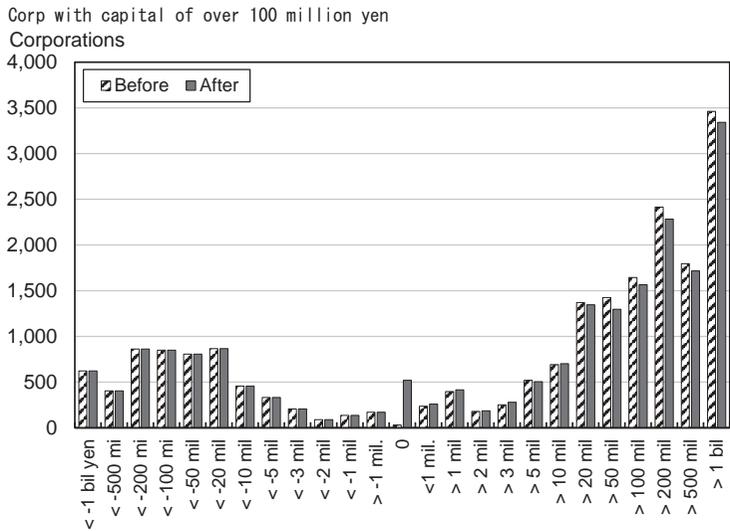
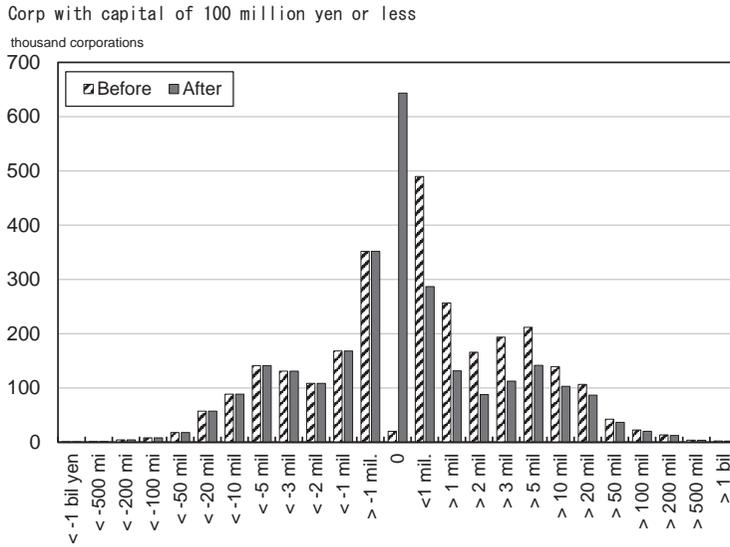
ferent.

Among corporations with capital of 100 million yen or less, the income bracket of between 0 yen and 1 million yen for income before loss carryforward deductions has the largest number of corporations. But as mentioned above, for income after loss carryforward deductions, the income bracket with a deficit of 0 yen appears to have the largest number of corporations and to be bunching. On the other hand, for corporations with capital of over 100 million yen, the distribution does not show this pattern. While it is true that the income bracket with a deficit of 0 yen for income after loss carryforward deductions has more corporations than the neighboring brackets, it is not an outstanding number. Rather, the bracket with the largest number of corporations is the income bracket of over 1 billion yen, and there appears to be a polarization between loss-making corporations and profit-making corporations.

III-2. Income and Loss Distribution

Let's look at how the income of profit-making corporations and the losses of loss-making corporations have changed over time. First, Table 9 shows the income and losses before loss carryforward deductions per corporation (divided by the number of corporations by income bracket in Table 2). Note that Table 9 shows the distribution by income and loss bracket after loss carryforward deductions. Corporations whose losses (income) are exactly 0 yen after loss carryforward deductions naturally have an income of 0 yen per corporation after loss carryforward deductions, but their income before loss carryforward deductions is not necessarily 0 yen. Corporations that were able to apply loss carryforward deductions in the current fiscal year have a positive income before loss carryforward deductions. This is

Figure 1. The Number of Corporations before and after Loss Carryforward Deduction



Source: Authors' calculation

also reflected in that in the 0 yen loss bracket in Table 9, the average income per corporation in FY2014 was 5.13 million yen.

The amounts shown in Table 9 are income before loss carryforward deductions, which are not published in the National Tax Agency Annual Statistics Report or the Corporate Sample Survey.¹² Income after loss carryforward deductions is the amount of income minus loss carryforward permitted under tax law. Income before loss carryforward deductions is the amount of income before deductions, and therefore may more directly reflect the current

Table 9. Income/Loss before Loss Carryforward Deduction Per Corporation

All corporations	unit: 10 thousand yen (million yen for total)						
Loss after deduction	2014	2015	2016	2017	2018	2019	2020
¥ 1 bil+	-607,841	-454,937	-440,811	-821,364	-562,120	-548,391	-553,790
500 mil+	-68,831	-68,832	-67,588	-68,814	-68,383	-69,197	-68,817
200 mil+	-30,209	-30,232	-30,409	-30,183	-30,216	-30,253	-30,509
100 mil+	-13,795	-13,890	-13,893	-13,809	-13,921	-13,863	-13,836
50 mil+	-6,936	-6,918	-6,913	-6,919	-6,910	-6,907	-6,919
20 mil+	-3,055	-3,048	-3,038	-3,037	-3,042	-3,044	-3,059
10 mil+	-1,394	-1,394	-1,393	-1,391	-1,390	-1,394	-1,401
5 mil+	-700	-700	-700	-700	-700	-702	-707
3 mil+	-387	-387	-388	-388	-388	-388	-390
2 mil+	-246	-246	-246	-246	-247	-246	-247
1 mil +	-146	-146	-146	-146	-146	-146	-146
between 0 and 1 mil.	-40	-40	-40	-40	-41	-40	-40
0	513	545	732	558	613	516	501
Average of loss-making corp	-448	-391	-293	-468	-391	-501	-872
Income after deduction							
between 0 and 1 mil.	81	79	78	77	76	76	83
1 mil +	217	215	216	206	203	203	203
2 mil+	333	325	322	316	311	315	309
3 mil+	486	480	474	471	464	464	460
5 mil+	848	840	810	810	803	801	797
10 mil+	1,601	1,571	1,553	1,550	1,526	1,527	1,526
20 mil+	3,448	3,425	3,354	3,359	3,319	3,307	3,316
50 mil+	7,673	7,521	7,417	7,440	7,349	7,316	7,311
100 mil+	15,246	15,010	14,875	14,694	14,610	14,589	14,562
200 mil+	33,459	33,002	32,678	32,449	32,157	31,768	31,840
500 mil+	75,128	73,361	72,730	71,625	72,598	71,639	71,992
1 bil+	687,559	686,001	638,788	632,855	683,249	614,247	661,474
Average of profit-making corp	5,880	5,866	5,715	5,884	6,090	5,419	5,511
Average (all)	1,670	1,798	1,878	1,888	2,044	1,751	1,525
Total of loss-making corp	-7,711,108	-6,642,876	-4,949,121	-7,870,097	-6,594,833	-8,507,964	-15,070,545
Total of profit-making corp	50,942,893	53,628,551	54,560,207	58,350,190	61,847,995	56,489,721	57,276,928
Total	43,231,785	46,985,675	49,611,086	50,480,093	55,253,162	47,981,757	42,206,383

Source: Authors' calculation

year's business environment. Of course, while current profits or losses for corporate accounting purposes are not listed on Appended Table 1(1) of the corporate tax return, the income before loss carryforward deductions estimated in this paper can be positioned as the amount closest to that amount using only the information in Appended Table 1(1) of the corporate tax return.

Table 9 shows that the average income before loss carryforward deductions per corporation for all corporations increased from 16.7 million yen in FY2014 to 20.44 million yen in FY2018, but decreased in FY2019 and FY2020. The income before loss carryforward deductions per profit-making corporation decreased from FY2014 to FY2016, but increased year-on-year in FY2017 and FY2018, decreased in FY2019, and increased in FY2020 compared to FY2019. The loss before loss carryforward deductions per loss-making corporation (negative income before loss carryforward deductions) was the largest in FY2020. Table 2 confirms that the proportion of loss-making corporations among all corporations increased in FY2020. However, although the amount of loss before deductions per loss-making corpo-

¹² However, as mentioned in footnote 8, please note that the income before loss carryforward deduction in this paper is the amount obtained by adding the loss carryforward deduction or disaster loss deduction etc. to the income amount or loss amount listed on Appended table 1(1) of the corporate tax return, and is not listed on Appended table 4 of the corporate tax return.

ration increased, the amount of income before deductions per profit-making corporation increased, suggesting that corporations were polarized between those that made large profits and those that incurred large losses during the COVID-19 pandemic.

Looking at income before loss carryforward deduction, shown in the bottom row of Table 9 as the total for all corporations, we can see that profit-making corporations increased their income from approximately 51 trillion yen in FY2014 to approximately 62 trillion yen in FY2018, but it decreased in FY2019 to approximately 57 trillion yen in FY2020. On the other hand, loss-making corporations incurred losses of approximately 5 trillion to 9 trillion yen in total from FY2014 to FY2019, but in FY2020 they had the largest loss of any of these periods at approximately 15 trillion yen. Total income before loss carryforward deduction for all corporations, including loss-making corporations and profit-making corporations, was the highest at approximately 55 trillion yen in FY2018, but fell to its lowest at approximately 42 trillion yen in FY2020.

Table 10 shows the income and loss amounts after deducting loss carryforward per corporation, broken down by income amount after loss carryforward deduction. Naturally, for income class where income amount after loss carryforward deduction is exactly 0 yen, the amount is 0 yen. Also, the amounts in Table 10 are less than those in Table 9 by the amount

Table 10. Income/Loss Per Corporation

All corporations		unit: 10 thousand yen (million yen for total)					
Loss after deduction	2014	2015	2016	2017	2018	2019	2020
¥ 1 bil+	-607,841	-454,937	-440,811	-821,364	-562,120	-548,391	-553,790
500 mil+	-68,831	-68,832	-67,588	-68,814	-68,383	-69,197	-68,817
200 mil+	-30,209	-30,232	-30,409	-30,183	-30,216	-30,253	-30,509
100 mil+	-13,795	-13,890	-13,893	-13,809	-13,921	-13,863	-13,836
50 mil+	-6,936	-6,918	-6,913	-6,919	-6,910	-6,907	-6,919
20 mil+	-3,055	-3,048	-3,038	-3,037	-3,042	-3,044	-3,059
10 mil+	-1,394	-1,394	-1,393	-1,391	-1,390	-1,394	-1,401
5 mil+	-700	-700	-700	-700	-700	-702	-707
3 mil+	-387	-387	-388	-388	-388	-388	-390
2 mil+	-246	-246	-246	-246	-247	-246	-247
1 mil +	-146	-146	-146	-146	-146	-146	-146
between 0 and 1 mil.	-40	-40	-40	-40	-41	-40	-40
0	0	0	0	0	0	0	0
Average of loss >= 0	-665	-612	-588	-693	-632	-700	-1,059
Income after deduction							
between 0 and 1 mil.	37	38	38	38	38	38	40
1 mil +	145	145	145	145	146	146	146
2 mil+	247	247	247	247	247	247	247
3 mil+	392	391	391	392	392	391	391
5 mil+	714	714	715	715	715	714	713
10 mil+	1,414	1,414	1,414	1,415	1,414	1,414	1,413
20 mil+	3,138	3,143	3,137	3,139	3,141	3,137	3,137
50 mil+	6,980	6,985	7,007	7,009	7,008	7,005	7,007
100 mil+	13,938	13,980	13,992	13,966	13,953	13,959	13,992
200 mil+	30,910	30,944	31,074	30,901	30,831	30,726	30,817
500 mil+	69,303	69,497	69,381	69,183	69,710	69,539	69,631
1 bil+	645,203	655,741	612,831	614,440	653,541	606,141	639,398
Average of income > 0	5,432	5,519	5,415	5,629	5,786	5,255	5,276
Average (all)	1,376	1,533	1,581	1,652	1,780	1,566	1,320
Total of loss >= 0	-11,446,141	-10,401,910	-9,915,784	-11,646,243	-10,658,302	-11,881,176	-18,296,415
Total of income >= 0	47,062,218	50,454,130	51,692,008	55,823,405	58,766,986	54,777,005	54,837,316
Total	35,616,077	40,052,220	41,776,224	44,177,162	48,108,683	42,895,829	36,540,900

Source: Authors' calculation

of the current-period loss carryforward deduction applied. For loss classes where the loss amount is over 0 yen, the loss carryforward deduction cannot be applied, so the amounts in Tables 9 and 10 are the same. Since Tables 9 and 10 use the same income and loss brackets, the same corporations are compared within the same income or loss class (the number of corporations in each income or loss class are shown in Table 2).

According to Table 10, loss-making corporations had an average loss of around 6 million yen per corporation until FY2019, but this exceeded 10 million yen in FY2020. Profit-making corporations had an average income after loss carryforward deduction of over 50 million yen. Comparing this with the amounts in Table 9, it appears that profit-making corporations were applying loss carryforward deductions of around 3 million yen per corporation on average.

The bottom row of Table 10, as in Table 9, shows the total income of profit-making corporations and the total losses of loss-making corporations. The total losses of loss-making corporations were around 11 trillion yen until FY2019, but rose to approximately 18 trillion yen in FY2020. The total income of profit-making corporations increased to approximately 59 trillion yen in FY2018 but then fell to the 54 trillion yen. The total for all corporations increased to approximately 48 trillion yen in FY2018, but then began to decline, reaching approximately 37 trillion yen in FY2020. The difference between the amounts in Table 9 and Table 10 suggests that the current-period loss carryforward deduction amount was around 6 trillion yen during this period. More details will be discussed in Section VI.

III-3. Corporate Tax Payment Distribution

The amount of corporate tax burden is calculated by multiplying the income amount shown in Table 10 by the prescribed tax rate (calculated tax amount), subtracting special deductions such as those for the research and development tax system and the wage increase promotion tax system, adding tax on taxable land transfer profits and taxable retained earnings, and deducting income tax, foreign tax, etc. This is called the corporate tax amount in this paper. It is the “corporate tax amount on net income” on Appended Table 1 (1) of the corporate tax return.

Table 11 shows the corporate tax amount by income bracket after loss carryforward deduction. The top row of the Table shows the total amount for that bracket (the total amount of corporate tax paid by corporations belonging to that income bracket), and the bottom row shows the amount per corporation (the value in the top row of Table 11 divided by the number of corporations by income bracket in Table 2). Doi, Bessho, and Mori (2023) confirm that the total amount in Table 11 is quite similar to the amount of corporate tax in the National Tax Agency’s Annual Statistics Report (the amount for the statutory business year excluding surcharges and excluding the amount for consolidated corporations).

Even loss-making corporations are required to pay corporate tax because they are subject to tax on profits from the transfer of taxable land, etc. Looking at the average per corporation, it is possible to exceed 100,000 yen depending on the size of the corporation, but for

Table 11. Corporate Tax Amount Paid by Tax Amount Bracket

All corporations		unit: million yen						
Loss class	2014	2015	2016	2017	2018	2019	2020	
¥ 1 bil+	450	239	66	65	3	107	373	
500 mil+	45	31	101	54	93	237	18	
200 mil+	114	109	69	251	81	156	111	
100 mil+	311	117	210	101	309	291	183	
50 mil+	145	278	129	209	207	208	270	
20 mil+	147	290	147	208	373	196	184	
10 mil+	94	153	81	112	127	154	86	
5 mil+	70	98	143	123	127	94	51	
3 mil+	42	22	48	37	51	56	72	
2 mil+	24	15	61	26	22	28	21	
1 mil +	36	19	30	28	20	31	30	
between 0 and 1 mil.	33	42	39	43	27	31	48	
0	120	138	118	64	59	70	32	
Loss >= 0	1,631	1,550	1,241	1,321	1,500	1,661	1,478	
Income class								
between 0 and 1 mil.	14,976	15,525	15,848	16,252	16,419	16,713	16,710	
1 mil +	22,203	23,253	24,280	25,065	25,605	26,326	28,125	
2 mil+	23,953	25,445	26,715	27,771	28,531	29,447	31,701	
3 mil+	49,427	52,189	55,191	57,137	59,331	61,301	64,207	
5 mil+	116,422	124,890	131,876	137,407	142,011	148,740	149,709	
10 mil+	214,890	228,373	235,840	245,094	253,769	265,308	259,796	
20 mil+	470,635	501,276	510,218	529,202	542,311	565,446	550,683	
50 mil+	478,233	512,579	518,298	541,291	543,103	570,089	557,530	
100 mil+	565,819	596,690	601,719	638,082	649,725	662,862	643,192	
200 mil+	880,960	898,847	928,901	979,938	1,000,535	987,433	966,605	
500 mil+	715,599	747,396	759,444	803,309	842,487	820,578	779,791	
1 bil+	6,168,864	6,370,732	6,151,859	6,798,706	7,234,190	6,419,277	6,537,513	
Income > 0	9,721,981	10,097,196	9,960,189	10,799,254	11,338,016	10,573,521	10,585,563	
Total	9,723,612	10,098,747	9,961,429	10,800,575	11,339,516	10,575,183	10,587,041	

Per corporation		unit:10 thousand yen						
Loss class	2014	2015	2016	2017	2018	2019	2020	
¥ 1 bil+	59.623	31.371	9.542	10.507	0.528	13.886	26.316	
500 mil+	5.151	3.464	11.731	7.655	10.312	23.179	1.129	
200 mil+	3.615	3.463	2.230	8.952	2.778	4.571	2.105	
100 mil+	5.613	2.128	3.857	1.973	5.643	4.768	2.014	
50 mil+	1.296	2.446	1.151	1.989	1.795	1.617	1.438	
20 mil+	0.414	0.810	0.412	0.600	1.010	0.483	0.316	
10 mil+	0.161	0.259	0.135	0.189	0.203	0.233	0.096	
5 mil+	0.066	0.089	0.129	0.110	0.111	0.079	0.036	
3 mil+	0.036	0.019	0.040	0.031	0.041	0.045	0.055	
2 mil+	0.023	0.014	0.057	0.024	0.020	0.025	0.020	
1 mil +	0.020	0.011	0.017	0.016	0.011	0.018	0.018	
between 0 and 1 mil.	0.009	0.011	0.010	0.011	0.007	0.008	0.014	
0	0.016	0.020	0.017	0.009	0.009	0.011	0.005	
Loss >= 0	0.095	0.091	0.074	0.079	0.089	0.098	0.086	
Income class								
between 0 and 1 mil.	5.4	5.5	5.5	5.5	5.5	5.6	5.8	
1 mil +	21.1	21.1	21.1	21.0	21.1	21.1	21.3	
2 mil+	35.9	35.7	35.8	35.7	35.7	35.9	36.0	
3 mil+	56.7	56.5	56.5	56.4	56.4	56.6	56.8	
5 mil+	106.1	105.5	105.2	104.6	104.5	104.8	105.2	
10 mil+	263.6	260.2	252.5	249.3	247.9	248.4	250.2	
20 mil+	677.4	664.4	634.1	622.2	618.8	620.6	625.7	
50 mil+	1,588.2	1,552.9	1,484.5	1,454.4	1,442.1	1,450.2	1,465.6	
100 mil+	3,218.4	3,137.7	2,995.3	2,935.7	2,906.7	2,929.6	2,959.0	
200 mil+	7,157.0	6,907.3	6,643.5	6,499.1	6,453.0	6,473.3	6,548.8	
500 mil+	15,856.4	15,246.8	14,726.5	14,440.2	14,505.6	14,569.9	14,657.7	
1 bil+	129,652.5	127,389.2	114,495.8	116,696.0	124,064.3	114,589.0	120,573.8	
Income > 0	1,122.2	1,104.5	1,043.3	1,089.0	1,116.4	1,014.4	1,018.5	
Total	375.6	386.5	377.1	404.0	419.6	386.0	382.5	

Source: Authors' calculation

loss-making corporations overall, it remains around 900 yen. Looking at profit-making corporations, it is observed that in every fiscal year, when income exceeds 5 million yen, the corporate tax amount per corporation exceeds 1 million yen. When income exceeds 50 million yen, the corporate tax amount per corporation exceeds 10 million yen, and when income exceeds 500 million yen, the corporate tax amount per corporation exceeds 100 million yen. The average for profit-making corporations is just over 10 million yen, while the average for all corporations is around 4 million yen.

IV. Distribution by Corporate Tax Amount Bracket

Table 11 shows the corporate tax amount by income bracket after loss carryforward deduction, while Table 12 shows the number of corporations by corporate tax bracket. The distribution by corporate tax bracket is not shown in the National Tax Agency's Annual Statistics Report or the Corporate Sample Survey, and revealing this information is one of the contributions of this paper. Naturally, corporations with zero corporate tax are the most

Table 12. The Number of Corporations by Corporate Tax Amount Bracket

All corporations		Unit: corporations						
Corporate tax amount	2014	2015	2016	2017	2018	2019	2020	
0 yen	1,734,162	1,710,968	1,698,452	1,693,170	1,698,772	1,709,541	1,740,585	
between 0 and 1 mil.	579,786	605,318	628,010	647,393	660,991	674,399	679,944	
1 mil +	74,847	81,469	88,788	93,745	97,291	101,764	100,957	
2 mil+	36,916	40,063	43,527	45,991	47,947	50,226	49,060	
3 mil+	42,327	45,464	48,842	51,851	53,509	55,769	53,945	
5 mil+	45,911	50,037	52,610	55,097	56,666	58,754	56,718	
10 mil+	31,497	34,004	34,672	36,560	36,767	38,544	37,591	
20 mil+	23,392	25,010	25,620	27,092	27,762	28,054	27,320	
50 mil+	9,479	9,682	9,960	10,681	10,918	10,800	10,577	
100 mil+	5,194	5,508	5,585	5,775	5,983	5,816	5,566	
200 mil+	3,207	3,246	3,415	3,696	3,652	3,542	3,386	
500 mil+	1,098	1,101	1,124	1,208	1,217	1,179	1,197	
1 bil+	1,014	1,032	1,035	1,102	1,095	1,086	1,018	
Total of 5 mil+	120,792	129,620	134,021	141,211	144,060	147,775	143,373	
Total	2,588,830	2,612,902	2,641,640	2,673,361	2,702,570	2,739,474	2,767,864	

Shares		Unit: %						
Corporate tax amount	2014	2015	2016	2017	2018	2019	2020	
0 yen	66.99	65.48	64.30	63.33	62.86	62.40	62.89	
between 0 and 1 mil.	22.40	23.17	23.77	24.22	24.46	24.62	24.57	
1 mil +	2.89	3.12	3.36	3.51	3.60	3.71	3.65	
2 mil+	1.43	1.53	1.65	1.72	1.77	1.83	1.77	
3 mil+	1.63	1.74	1.85	1.94	1.98	2.04	1.95	
5 mil+	1.77	1.91	1.99	2.06	2.10	2.14	2.05	
10 mil+	1.22	1.30	1.31	1.37	1.36	1.41	1.36	
20 mil+	0.90	0.96	0.97	1.01	1.03	1.02	0.99	
50 mil+	0.37	0.37	0.38	0.40	0.40	0.39	0.38	
100 mil+	0.20	0.21	0.21	0.22	0.22	0.21	0.20	
200 mil+	0.12	0.12	0.13	0.14	0.14	0.13	0.12	
500 mil+	0.04	0.04	0.04	0.05	0.05	0.04	0.04	
1 bil+	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
Total of 5 mil+	4.67	4.96	5.07	5.28	5.33	5.39	5.18	

Source: Authors' calculation

prevalent, accounting for over 60% of all corporations. However, the number of corporations tends to decrease as the corporate tax bracket increases. Corporations with zero corporate tax include not only profit-making corporations with zero corporate tax after applying tax credits, but also loss-making corporations. Among tax-paying corporations (corporations with corporate tax rates exceeding zero), corporate tax rates between zero and 1 million yen account for approximately two-thirds in each fiscal year. Table 12 reveals that corporations with corporate tax amount exceeding 5 million yen account for approximately 5% of all corporations. However, as noted above, this does not include consolidated corporations.

Table 13 shows the corporate tax amount by the same corporate tax bracket. Table 13, which shows the total amount of corporate tax paid by corporations belonging to that bracket, shows that in every fiscal year, corporations with corporate tax amounts of over 5 million yen accounted for around 94% of all corporations (excluding consolidated corporations) covered in this paper. In other words, around 5% of all corporations pay nearly 95% of corporate tax revenue. This makes clear the structure in which most corporate tax revenue comes from corporations that individually pay a large amount of corporate tax.

The bottom Table in Table 13 shows the corporate tax amount per corporation by corporate tax bracket, calculated by dividing the values in the top Table in Table 13 by the number of corporations by corporate tax bracket in Table 12. Because the figures are categorized by corporate tax bracket, the higher the bracket, the higher the amount per corporation. Corporations with corporate tax amounts over 5 million yen pay an average of approximately 70 million yen in corporate tax. Tax-paying corporations pay an average of over 10 million yen in corporate tax. This differs from the average corporate tax amount for profit-making corporations shown in Table 11, as the target corporations are different. As mentioned above, approximately two-thirds of tax-paying corporations pay between 0 yen and 1 million yen, suggesting that the median corporate tax amount for tax-paying corporations is less than 1 million yen. The average corporate tax amount for all corporations is shown in Table 11.

V. Loss-making Corporations by Capital Class

V-1. Distribution of the Number of Corporations

This section looks at loss-making corporations by capital class. Table 14 shows the number of profit-making and loss-making corporations by capital class for each year. Looking at the total number of corporations by capital class, we can see that corporations with capital of over 2 million yen and up to 5 million yen are the largest class, accounting for around 40% of all corporations. The total number of corporations with capital of over 100 million yen is as shown in Table 6.

Table 14 shows that the proportion of loss-making corporations is lower among corporations with capital of over 100 million yen compared to corporations with capital of less than 100 million yen, as observed in Tables 2 and 6 (the proportion of loss-making corporations and profit-making corporations with capital of over 100 million yen is shown in Table 6).

Table 13. Corporate Tax Amount by Capital Class

All corporations		unit: million yen						
Corporate tax amount	2014	2015	2016	2017	2018	2019	2020	
0 yen	0	0	0	0	0	0	0	
between 0 and 1 mil.	154,341	163,972	172,738	179,786	185,736	191,376	198,215	
1 mil +	104,528	113,781	124,363	131,349	136,466	142,645	141,238	
2 mil+	90,907	98,645	107,093	113,077	117,987	123,568	120,599	
3 mil+	164,666	176,798	190,006	201,499	207,853	216,533	209,754	
5 mil+	325,095	354,568	371,579	389,614	400,631	415,713	400,470	
10 mil+	441,937	477,997	487,342	514,556	515,964	541,666	527,288	
20 mil+	725,931	776,490	794,580	840,227	858,135	868,136	845,661	
50 mil+	662,402	675,382	697,349	745,731	762,112	751,423	738,487	
100 mil+	721,981	764,849	775,228	800,780	836,913	810,337	776,195	
200 mil+	980,576	998,286	1,043,894	1,131,056	1,117,456	1,082,287	1,031,046	
500 mil+	759,569	765,389	775,436	835,382	843,626	812,387	824,925	
1 bil+	4,591,679	4,732,591	4,421,820	4,917,519	5,356,636	4,619,110	4,773,164	
Total of 5 mil+	9,209,169	9,545,552	9,367,229	10,174,865	10,691,474	9,901,060	9,917,236	

Shares		unit: %						
Corporate tax amount	2014	2015	2016	2017	2018	2019	2020	
0 yen	0	0	0	0	0	0	0	
between 0 and 1 mil.	1.59	1.62	1.73	1.66	1.64	1.81	1.87	
1 mil +	1.07	1.13	1.25	1.22	1.20	1.35	1.33	
2 mil+	0.93	0.98	1.08	1.05	1.04	1.17	1.14	
3 mil+	1.69	1.75	1.91	1.87	1.83	2.05	1.98	
5 mil+	3.34	3.51	3.73	3.61	3.53	3.93	3.78	
10 mil+	4.54	4.73	4.89	4.76	4.55	5.12	4.98	
20 mil+	7.47	7.69	7.98	7.78	7.57	8.21	7.99	
50 mil+	6.81	6.69	7.00	6.90	6.72	7.11	6.98	
100 mil+	7.43	7.57	7.78	7.41	7.38	7.66	7.33	
200 mil+	10.08	9.89	10.48	10.47	9.85	10.23	9.74	
500 mil+	7.81	7.58	7.78	7.73	7.44	7.68	7.79	
1 bil+	47.22	46.86	44.39	45.53	47.24	43.68	45.08	
Total of 5 mil+	94.71	94.52	94.03	94.21	94.29	93.63	93.67	

Per corporation		unit: 10 thousand yen						
Corporate tax amount	2014	2015	2016	2017	2018	2019	2020	
0 yen	0	0	0	0	0	0	0	
between 0 and 1 mil.	26.6	27.1	27.5	27.8	28.1	28.4	29.2	
1 mil +	139.7	139.7	140.1	140.1	140.3	140.2	139.9	
2 mil+	246.3	246.2	246.0	245.9	246.1	246.0	245.8	
3 mil+	389.0	388.9	389.0	388.6	388.4	388.3	388.8	
5 mil+	708.1	708.6	706.3	707.1	707.0	707.5	706.1	
10 mil+	1,403.1	1,405.7	1,405.6	1,407.4	1,403.3	1,405.3	1,402.7	
20 mil+	3,103.3	3,104.7	3,101.4	3,101.4	3,091.0	3,094.5	3,095.4	
50 mil+	6,988.1	6,975.6	7,001.5	6,981.8	6,980.3	6,957.6	6,982.0	
100 mil+	13,900.3	13,886.1	13,880.5	13,866.3	13,988.2	13,932.9	13,945.3	
200 mil+	30,576.1	30,754.4	30,567.9	30,602.2	30,598.5	30,555.8	30,450.3	
500 mil+	69,177.5	69,517.6	68,989.0	69,154.2	69,320.2	68,904.8	68,916.0	
1 bil+	452,828.3	458,584.4	427,229.0	446,235.9	489,190.5	425,332.4	468,876.6	
Average of 0+	1,137.7	1,119.7	1,056.1	1,101.9	1,129.7	1,026.8	1,030.6	
Average of 5 mil+	7,624.0	7,364.3	6,989.4	7,205.4	7,421.5	6,700.1	6,917.1	

Source: Authors' calculation

Partly due to the COVID-19 pandemic, the proportion of loss-making corporations among corporations with capital of over 100 million yen in FY2020 was the highest during this period, but prior to FY2019 there was a larger difference between the proportion of loss-making corporations among corporations with capital of less than 100 million yen, and those

Table 14. Profit-making and Loss-making Corporations by Capital Class

The number of corporations

All corporations

Unit: corporations

Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil. yen	326,207	359,619	394,080	431,682	468,459	508,961	545,334
1 mil +	51,894	56,450	60,966	65,290	69,295	73,466	77,475
2 mil+	1,117,933	1,111,352	1,106,870	1,102,217	1,095,720	1,091,532	1,087,089
5 mil+	717,425	711,880	708,143	703,565	698,575	695,088	689,321
10 mil+	151,227	149,661	147,928	146,806	146,059	145,518	144,254
20 mil+	151,102	150,875	150,419	150,365	150,731	150,994	150,781
50 mil+	48,856	49,664	50,570	51,396	52,357	53,051	53,398
100 mil+	15,681	15,073	14,500	14,013	13,498	13,092	12,515
500 mil+	2,257	2,227	2,176	2,150	2,074	2,011	2,000
1 bil+	4,161	4,049	3,948	3,880	3,819	3,781	3,696
5 bil+	900	877	873	855	838	835	845
10 bil+	1,187	1,175	1,167	1,142	1,145	1,145	1,156
Total of < 100mil	2,564,644	2,589,501	2,618,976	2,651,321	2,681,196	2,718,610	2,747,652

Loss-making corporations (negative income)

Unit: corporations

Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil. yen	147,869	159,841	173,543	188,071	204,078	217,914	222,474
1 mil +	22,771	24,529	26,008	27,853	29,276	30,852	31,218
2 mil+	454,319	457,081	449,666	439,770	438,299	433,968	433,886
5 mil+	263,825	263,052	257,609	250,240	250,534	252,916	272,148
10 mil+	45,372	44,331	43,574	41,627	42,559	43,939	50,326
20 mil+	41,900	41,277	40,313	39,237	40,580	43,030	50,481
50 mil+	13,194	13,121	13,237	12,913	13,865	15,185	18,179
100 mil+	3,983	3,700	3,537	3,363	3,470	3,613	3,864
500 mil+	456	425	421	394	421	459	537
1 bil+	771	691	666	642	680	776	903
5 bil+	166	150	165	157	165	196	237
10 bil+	209	204	193	183	180	210	257
Total of < 100mil	989,250	1,003,232	1,003,950	999,711	1,019,191	1,037,804	1,078,712

Loss-making corporations (zero income)

Unit: corporations

Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil. yen	59,019	65,071	71,201	78,675	85,926	94,632	105,131
1 mil +	11,200	11,864	12,818	13,573	14,717	15,555	16,871
2 mil+	351,946	326,300	315,849	311,304	300,841	293,592	289,410
5 mil+	217,336	203,423	197,829	194,888	187,215	180,083	169,872
10 mil+	40,743	38,162	36,070	35,118	32,805	31,048	27,531
20 mil+	36,551	34,787	33,722	33,034	31,269	29,574	26,468
50 mil+	10,165	10,050	9,951	9,998	9,530	9,051	8,203
100 mil+	392	412	387	395	332	327	307
500 mil+	111	95	71	77	72	56	75
1 bil+	113	105	107	91	103	90	86
5 bil+	26	25	21	20	22	22	17
10 bil+	41	39	38	39	34	39	35
Total of < 100mil	726,960	689,657	677,440	676,590	662,303	653,535	643,486

Profit-making corporations

Unit: corporations

Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil. yen	119,319	134,707	149,336	164,936	178,455	196,415	217,729
1 mil +	17,923	20,057	22,140	23,864	25,302	27,059	29,386
2 mil+	311,668	327,971	341,355	351,143	356,580	363,972	363,793
5 mil+	236,264	245,405	252,705	258,437	260,826	262,089	247,301
10 mil+	65,112	67,168	68,284	70,061	70,695	70,531	66,397
20 mil+	72,651	74,811	76,384	78,094	78,882	78,390	73,832
50 mil+	25,497	26,493	27,382	28,485	28,962	28,815	27,016
100 mil+	11,306	10,961	10,576	10,255	9,696	9,152	8,344
500 mil+	1,690	1,707	1,684	1,679	1,581	1,496	1,388
1 bil+	3,277	3,253	3,175	3,147	3,036	2,915	2,707
5 bil+	708	702	687	678	651	617	591
10 bil+	937	932	936	920	931	896	864
Total of < 100mil	848,434	896,612	937,586	975,020	999,702	1,027,271	1,025,454

Table 14. Profit-making and Loss-making Corporations by Capital Class (continued)

Shares							
Loss-making corporations (negative income) Unit: %							
Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil.	45.33	44.45	44.04	43.57	43.56	42.82	40.80
1 mil +	43.88	43.45	42.66	42.66	42.25	41.99	40.29
2 mil+	40.64	41.13	40.63	39.90	40.00	39.76	39.91
5 mil+	36.77	36.95	36.38	35.57	35.86	36.39	39.48
10 mil+	30.00	29.62	29.46	28.36	29.14	30.19	34.89
20 mil+	27.73	27.36	26.80	26.09	26.92	28.50	33.48
50 mil+	27.01	26.42	26.18	25.12	26.48	28.62	34.04
100 mil+	25.40	24.55	24.39	24.00	25.71	27.60	30.87
500 mil+	20.20	19.08	19.35	18.33	20.30	22.82	26.85
1 bil+	18.53	17.07	16.87	16.55	17.81	20.52	24.43
5 bil+	18.44	17.10	18.90	18.36	19.69	23.47	28.05
10 bil+	17.61	17.36	16.54	16.02	15.72	18.34	22.23
Total of < 100mil	38.57	38.74	38.33	37.71	38.01	38.17	39.26

Loss-making corporations (zero income) Unit: %							
Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil. yen	18.09	18.09	18.07	18.23	18.34	18.59	19.28
1 mil +	21.58	21.02	21.02	20.79	21.24	21.17	21.78
2 mil+	31.48	29.36	28.54	28.24	27.46	26.90	26.62
5 mil+	30.29	28.58	27.94	27.70	26.80	25.91	24.64
10 mil+	26.94	25.50	24.38	23.92	22.46	21.34	19.09
20 mil+	24.19	23.06	22.42	21.97	20.74	19.59	17.55
50 mil+	20.81	20.24	19.68	19.45	18.20	17.06	15.36
100 mil+	2.50	2.73	2.67	2.82	2.46	2.50	2.45
500 mil+	4.92	4.27	3.26	3.58	3.47	2.78	3.75
1 bil+	2.72	2.59	2.71	2.35	2.70	2.38	2.33
5 bil+	2.89	2.85	2.41	2.34	2.63	2.63	2.01
10 bil+	3.45	3.32	3.26	3.42	2.97	3.41	3.03
Total of < 100mil	28.35	26.63	25.87	25.52	24.70	24.04	23.42

Profit-making corporations Unit: %							
Capital class	2014	2015	2016	2017	2018	2019	2020
between 0 and 1 mil. yen	36.58	37.46	37.89	38.21	38.09	38.59	39.93
1 mil +	34.54	35.53	36.32	36.55	36.51	36.83	37.93
2 mil+	27.88	29.51	30.84	31.86	32.54	33.35	33.46
5 mil+	32.93	34.47	35.69	36.73	37.34	37.71	35.88
10 mil+	43.06	44.88	46.16	47.72	48.40	48.47	46.03
20 mil+	48.08	49.58	50.78	51.94	52.33	51.92	48.97
50 mil+	52.19	53.34	54.15	55.42	55.32	54.32	50.59
100 mil+	72.10	72.72	72.94	73.18	71.83	69.91	66.67
500 mil+	74.88	76.65	77.39	78.09	76.23	74.39	69.40
1 bil+	78.76	80.34	80.42	81.11	79.50	77.10	73.24
5 bil+	78.67	80.05	78.69	79.30	77.68	73.89	69.94
10 bil+	78.94	79.32	80.21	80.56	81.31	78.25	74.74
Total of < 100mil	33.08	34.62	35.80	36.77	37.29	37.79	37.32

Source: Authors' calculation

with capital of over 100 million yen.

Table 14 shows that the proportion of loss-making corporations with negative income before loss carryforward deductions in each capital class, when looking at the class with capital of 100 million yen or less, generally increases as the capital decreases. The high proportion of loss-making corporations with negative income before loss carryforward deductions among corporations with capital of 100 million yen or less is thought to be due to the fact that this tendency is stronger among corporations with smaller capital sizes.

We have already confirmed that the proportion of profit-making corporations in each capital class differs between those with capital of 100 million yen or less and those with capital of over 100 million yen. It is notable that among corporations with capital of 100 million yen or less, the proportion of profit-making corporations is higher among corporations with capital of over 10 million yen than among corporations with capital of 10 million yen or less.

Corporations with capital of over 100 million yen differ from corporations with capital of less than 100 million yen in terms of loss carryforwards, as mentioned above, but they also differ in that, with the exception of certain industries, they are subject to enterprise tax based on the size of the enterprise (value-added and capital). Table 15 shows the number of corporations subject to the size-based business taxation (size-based-taxed corporations) shown in Table 1, broken down by capital class. Comparing Table 15 with Table 14, it can be seen that many corporations with capital of over 100 million yen are size-based-taxed corporations.

As in Section III, we will show the number and percentage distribution of corporations subject to the size-based business taxation whose income before loss carryforward deductions and income after loss carryforward deductions are positive, zero, and negative, respectively. Table 16 shows the number and percentage distribution of corporations subject to the size-based business taxation whose income before loss carryforward deductions is positive, zero, and negative (loss amount before loss carryforward deductions is over 0 yen). Since the size-based-taxed corporations have capital of over 100 million yen, Table 16 shows a similar trend to Table 7. Approximately 20-30% of corporations are loss-making corpora-

Table 15. The Number of Size-based-taxed Corporations

Capital class	Unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
100 mil+ yen	14,077	13,481	12,917	12,456	11,968	11,595	11,057
500 mil+	1,696	1,673	1,640	1,605	1,551	1,501	1,473
1 bil+	2,944	2,860	2,786	2,718	2,640	2,615	2,526
5 bil+	654	644	629	611	587	580	577
10 bil+	758	728	717	687	680	668	660
Total	20,129	19,386	18,689	18,077	17,426	16,959	16,293

Source: Authors' calculation

Table 16. The Income/Loss before Loss Carryforward Deduction of Size-based-taxed Corporations

Size-based-taxed corporations Income/loss before deduction	Unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
Loss > 0	4,660	4,301	4,123	3,833	3,942	4,260	4,781
Loss = 0	40	40	25	22	21	17	13
Income > 0	15,429	15,045	14,541	14,222	13,463	12,682	11,499
Shares							
Income ≤ 0	23.35%	22.39%	22.19%	21.33%	22.74%	25.22%	29.42%
Income < 0	23.15%	22.19%	22.06%	21.20%	22.62%	25.12%	29.34%
Income = 0	0.20%	0.21%	0.13%	0.12%	0.12%	0.10%	0.08%
Income > 0	76.65%	77.61%	77.81%	78.67%	77.26%	74.78%	70.58%

Source: Authors' calculation

tions with income before loss carryforward deductions of 0 yen or less, but the remaining approximately 70-80% of corporations have positive income before loss carryforward deductions.

Table 17 also shows the number and composition ratio of size-based-taxed corporations whose income after loss carryforward deduction is positive (and therefore profit-making), zero, and negative (loss amount after loss carryforward deduction is over 0 yen). Since size-based-taxed corporations have capital of over 100 million yen, Table 17 shows a similar trend to Table 6. The proportion of profit-making corporations is just under 70% to just under 80%. As shown in Table 6, the proportion of corporations with a zero loss is just under 3% for all corporations with capital of over 100 million yen, but just under 2% for size-based-taxed corporations only.

V-2. Income and Loss Distribution

Table 18 shows income before loss carryforward deductions per corporation by capital class. The first section of Table 18 shows income before loss carryforward deductions per corporation in each capital class. With the exception of those with capital of 1 million yen or less (including those with unknown capital), income before loss carryforward deductions per corporation increases as the capital class increases. The total income before loss carryforward deductions for all corporations is as shown in Table 9, but when broken down by capital size in Table 18, corporations with capital of 100 million yen or less generate around 40% of the total, and corporations with capital of over 100 million yen generate around 60% of the total. Size-based-taxed corporations alone generate around 45% of total income before loss carryforward deductions.

Since the first Table of Table 18 contains both loss-making corporations and profit-making corporations in the same capital class, the second and subsequent Tables of Table 18 show these separately as loss-making corporations with negative income after loss carryforward deduction, loss-making corporations with zero income after loss carryforward deduction, and profit-making corporations.

Table 17. The Income/Loss after Loss Carryforward Deduction of Size-based-taxed Corporations

Size-based-taxed corporations	Unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
Loss > 0	4,660	4,301	4,123	3,833	3,942	4,260	4,781
Loss = 0	332	348	318	343	279	246	236
Total of loss-making corp	4,992	4,649	4,441	4,176	4,221	4,506	5,017
Total of profit-making corp	15,137	14,737	14,248	13,901	13,205	12,453	11,276
Shares							
Loss-making corp	24.80%	23.98%	23.76%	23.10%	24.22%	26.57%	30.79%
Income < 0	23.15%	22.19%	22.06%	21.20%	22.62%	25.12%	29.34%
Income = 0	1.65%	1.80%	1.70%	1.90%	1.60%	1.45%	1.45%
Profit-making corp	75.20%	76.02%	76.24%	76.90%	75.78%	73.43%	69.21%

Source: Authors' calculation

Table 18. Income before Loss Carryforward Deduction Per Corporation: by Capital Class

All corporations		unit: 10 thousand yen (million yen for total)							
Capital class	2014	2015	2016	2017	2018	2019	2020		
between 0 and 1 mil. yen	451	349	664	311	410	227	203		
1 mil +	63	96	79	111	107	113	98		
2 mil+	26	130	142	164	167	179	126		
5 mil+	428	468	521	618	643	617	481		
10 mil+	1,063	1,168	1,262	1,436	1,431	1,440	1,180		
20 mil+	2,451	2,766	3,013	2,628	4,691	3,119	2,675		
50 mil+	10,281	9,276	11,050	11,868	13,114	10,204	8,475		
100 mil+	22,209	24,258	28,637	31,697	33,258	33,669	32,202		
500 mil+	61,050	67,499	64,626	68,660	76,340	68,680	61,573		
1 bil+	105,072	109,792	116,009	128,901	129,852	127,963	104,939		
5 bil+	280,671	307,225	290,035	283,445	289,905	244,306	191,453		
10 bil+	1,371,037	1,538,386	1,459,701	1,524,881	1,523,857	1,363,930	1,325,302		
Average of < 100mil	593	641	760	744	908	725	587		
Average of 100mil+	115,905	129,804	131,069	139,550	144,611	135,565	129,024		
Average of size-based-taxed corp	105,158	115,230	123,135	128,588	136,292	132,404	114,632		
Sum of < 100mil	15,199,070	16,610,139	19,905,694	19,723,297	24,344,075	19,697,413	16,128,031		
Sum of 100mil+	28,032,715	30,375,536	29,705,391	30,756,796	30,909,087	28,284,343	26,078,352		
Sum of size-based-taxed corp	21,167,207	22,338,487	23,012,754	23,244,939	23,750,168	22,454,384	18,677,004		
Loss-making corporations (income < 0)		unit: 10 thousand yen (million yen for total)							
Capital class	2014	2015	2016	2017	2018	2019	2020		
between 0 and 1 mil. yen	-480	-484	-414	-392	-399	-410	-541		
1 mil +	-339	-329	-336	-311	-324	-350	-420		
2 mil+	-569	-332	-340	-339	-351	-365	-499		
5 mil+	-829	-829	-826	-778	-783	-863	-1,104		
10 mil+	-1,444	-1,491	-1,491	-1,379	-1,548	-1,619	-1,914		
20 mil+	-3,263	-2,945	-2,909	-5,592	-2,763	-3,369	-4,017		
50 mil+	-8,562	-9,662	-7,915	-8,127	-8,544	-9,908	-14,747		
100 mil+	-17,786	-18,781	-17,280	-18,680	-16,215	-15,034	-23,844		
500 mil+	-22,604	-23,954	-20,176	-21,533	-19,794	-24,737	-35,192		
1 bil+	-48,695	-56,195	-57,218	-50,014	-48,700	-49,478	-101,242		
5 bil+	-128,908	-127,620	-146,311	-247,085	-161,010	-228,268	-261,551		
10 bil+	-638,013	-650,590	-654,654	-1,171,081	-1,133,993	-932,225	-1,352,721		
Average of < 100mil	-881	-767	-730	-808	-724	-813	-1,129		
Average of 100mil+	-48,959	-52,295	-51,828	-75,230	-66,802	-65,584	-105,569		
Average of size-based-taxed corp	-46,109	-50,121	-42,901	-48,584	-74,042	-61,096	-117,395		
Sum of < 100mil	-8,711,764	-7,698,265	-7,333,692	-8,081,092	-7,374,295	-8,435,413	-12,175,506		
Sum of 100mil+	-2,734,377	-2,703,645	-2,582,092	-3,565,150	-3,284,008	-3,445,763	-6,120,909		
Sum of size-based-taxed corp	-2,148,659	-2,155,715	-1,768,819	-3,242,091	-2,918,738	-2,602,670	-5,612,641		
Sum (all)	-11,446,141	-10,401,910	-9,915,784	-11,646,243	-10,658,302	-11,881,176	-18,296,415		
Loss-making corporations (income = 0)		unit: 10 thousand yen (million yen for sum)							
Capital class	2014	2015	2016	2017	2018	2019	2020		
between 0 and 1 mil. yen	227	362	2,225	266	805	238	272		
1 mil +	247	348	206	247	211	211	224		
2 mil+	247	245	241	250	250	251	253		
5 mil+	505	500	538	545	547	517	521		
10 mil+	893	903	926	921	884	881	885		
20 mil+	1,554	1,762	1,665	1,774	1,687	1,615	1,675		
50 mil+	5,163	6,080	5,424	6,752	5,207	5,679	6,624		
100 mil+	4,780	4,753	4,291	4,871	3,342	3,588	5,203		
500 mil+	12,341	17,383	10,797	12,529	15,269	10,180	10,642		
1 bil+	34,796	19,831	41,436	36,943	20,008	15,833	20,634		
5 bil+	39,286	30,132	37,205	29,923	44,273	59,219	23,163		
10 bil+	168,025	79,692	51,863	103,631	589,881	352,674	27,452		
Average of < 100mil	493	531	719	542	575	488	493		
Average of 100mil+	22,088	14,132	15,406	17,509	44,938	34,130	10,624		
Average of size-based-taxed corp	9,744	5,756	10,534	7,182	71,045	45,218	6,178		
Sum of < 100mil	3,584,173	3,663,503	4,870,532	3,667,240	3,810,471	3,190,957	3,170,625		
Sum of 100mil+	150,860	95,532	96,131	108,906	252,998	182,255	55,245		
Sum of size-based-taxed corp	32,351	20,029	33,497	24,634	198,216	111,235	14,580		
Sum (all)	3,735,033	3,759,034	4,966,662	3,776,146	4,063,469	3,373,212	3,225,870		
Profit-making corporations (income > 0)		unit: 10 thousand yen (million yen for sum)							
Capital class	2014	2015	2016	2017	2018	2019	2020		
between 0 and 1 mil. yen	1,716	1,330	1,171	1,135	1,146	927	931		
1 mil +	461	467	493	526	544	585	576		
2 mil+	645	660	685	717	734	769	770		
5 mil+	1,760	1,830	1,880	2,023	2,082	2,115	2,197		
10 mil+	2,917	3,073	3,197	3,367	3,478	3,592	3,648		
20 mil+	6,198	6,384	6,734	7,119	9,717	7,247	7,608		
50 mil+	22,073	19,869	22,263	22,728	26,084	22,225	24,663		
100 mil+	36,903	39,520	44,885	49,250	51,988	53,971	59,150		
500 mil+	86,821	93,057	88,095	92,400	104,720	99,531	101,762		
1 bil+	143,673	147,955	154,858	168,059	173,570	178,661	176,394		
5 bil+	385,567	410,009	402,563	413,775	412,493	401,026	377,955		
10 bil+	1,871,800	2,078,558	1,952,829	2,121,391	2,071,836	1,946,108	2,174,465		
Average of < 100mil	2,396	2,303	2,386	2,476	2,792	2,428	2,451		
Average of 100mil+	170,869	187,887	188,717	205,126	213,527	209,259	231,352		
Average of size-based-taxed corp	153,819	166,073	173,695	190,363	200,460	200,320	215,281		
Sum of < 100mil	20,326,661	20,644,901	22,368,854	24,137,149	27,907,898	24,941,870	25,132,912		
Sum of 100mil+	30,616,232	32,983,649	32,191,353	34,213,040	33,940,097	31,547,851	32,144,015		
Sum of size-based-taxed corp	23,283,516	24,474,173	24,748,075	26,462,397	26,470,689	24,945,819	24,275,065		

Source: Authors' calculation

The second Table in Table 18 shows the income before loss carryforward deduction per corporation by capital size for loss-making corporations with negative income after loss carryforward deduction. This shows that, with the exception of corporations with capital of 1 million yen or less (including those with unknown capital), the loss before loss carryforward deduction per corporation increases as the capital class increases. However, when it comes to total losses, corporations with capital of 100 million yen or less account for approximately 70% of the total. This is likely due to the predominance of corporations with capital of 100 million yen or less in the loss-making corporations whose income before loss carryforward deduction is negative. Table 9 shows the total loss before loss carryforward deduction for all loss-making corporations (i.e., including corporations with zero income after loss carryforward deduction). As shown in the second Table in Table 18, loss-making corporations with negative income after loss carryforward deduction alone incurred losses of approximately 10 to 11 trillion yen before FY2019 and over 18 trillion yen in FY2020.

The third Table in Table 18 shows the income before loss carryforward deductions per corporation by capital size for loss-making corporations with zero income after loss carryforward deductions. Loss-making corporations with zero income after loss carryforward deductions have positive income amounts because their income before loss carryforward deductions is zero or greater. This Table also shows that, with the exception of corporations with capital of 1 million yen or less (including those with unknown capital), the income before loss carryforward deductions per corporation increases with capital size. However, when looking at the total amount, corporations with capital of 100 million yen or less overwhelmingly outnumber loss-making corporations with zero income after loss carryforward deductions, and therefore corporations with capital of 100 million yen or less account for the majority of the total. The total income before loss carryforward deductions for loss-making corporations with zero income after loss carryforward deductions was around 4 trillion yen during this period.

Finally, the fourth Table in Table 18 shows income before loss carryforward deduction per corporation by capital size for profit-making corporations. As with the previous Tables, the larger the capital size, the higher the income before loss carryforward deduction per corporation, except for corporations with capital of 1 million yen or less (including those with unknown capital). Looking at the breakdown by capital size, corporations with capital of 100 million yen or less generate around 40% of the total income before loss carryforward deduction for profit-making corporations alone, while corporations with capital of over 100 million yen generate around 60% of the total. Size-based-taxed corporations alone generate around 45% of the total income before loss carryforward deduction for profit-making corporations alone.

Table 19 shows income after loss carryforward deductions per corporation by capital class. The top section of Table 19 shows income after loss carryforward deductions per corporation in each capital class. With the exception of those with capital of 1 million yen or less (including those with unknown capital), income after loss carryforward deductions per corporation increases as the capital class increases. The total income after loss carryforward

deductions for all corporations is as shown in Table 10, but when broken down by capital size in the top section of Table 19, corporations with capital of 100 million yen or less generate around 30% of the total, and corporations with capital of over 100 million yen generate around 70% of the total. Size-based-taxed corporations generate around 50% of total income after loss carryforward deductions alone.

As we saw in Section III, for loss-making corporations with negative income after loss carryforward deductions, regardless of capital class, the income after loss carryforward deductions is the same as the amount of income before loss carryforward deductions (the amount in Table 18), and for loss-making corporations with zero income after loss carryforward deductions, the income after loss carryforward deductions is, by definition, zero. Therefore, showing income after loss carryforward deductions by capital class is meaningful only for profit-making corporations. The bottom panel of Table 19 shows income after loss carryforward deductions per corporation by capital class for only profit-making corpora-

Table 19. Income (after Loss Carryforward Deduction) Per Corporation: by Capital Class

All corporations		unit: 10 thousand yen (million yen for sum)						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	388	267	242	241	245	166	133	
1 mil +	-4	7	23	46	47	53	30	
2 mil+	-71	39	55	75	80	92	38	
5 mil+	232	281	330	423	456	442	312	
10 mil+	752	861	967	1,137	1,162	1,175	946	
20 mil+	1,941	2,221	2,500	2,095	3,568	2,679	2,259	
50 mil+	8,619	7,533	9,422	9,985	11,575	8,830	7,040	
100 mil+	20,143	22,575	26,898	30,000	31,859	32,522	30,774	
500 mil+	56,482	62,417	61,046	65,442	74,168	66,695	59,351	
1 bil+	96,008	103,492	109,576	122,795	125,610	124,040	101,292	
5 bil+	259,887	281,409	276,829	268,558	280,211	236,162	183,167	
10 bil+	1,216,146	1,432,146	1,365,995	1,461,404	1,462,570	1,330,168	1,242,741	
Average of < 100mil	406	455	529	559	685	567	431	
Average of 100mil+	104,205	120,844	123,158	133,216	139,095	131,765	122,185	
Average of size-based-taxed corp	96,811	108,024	115,925	123,222	131,013	128,850	107,868	
Sum of < 100mil	10,413,103	11,773,457	13,863,728	14,816,372	18,378,454	15,404,452	11,844,943	
Sum of 100mil+	25,202,974	28,278,763	27,912,496	29,360,790	29,730,229	27,491,376	24,695,958	
Sum of size-based-taxed corp	19,487,081	20,941,519	21,665,277	22,274,926	22,830,353	21,851,735	17,574,995	

Profit-making corporations		unit: 10 thousand yen (million yen for sum)						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	1,656	1,286	1,119	1,078	1,100	885	886	
1 mil +	420	423	459	489	503	543	525	
2 mil+	574	595	627	659	678	712	709	
5 mil+	1,630	1,703	1,765	1,903	1,972	2,006	2,086	
10 mil+	2,753	2,902	3,046	3,202	3,332	3,433	3,505	
20 mil+	5,920	6,104	6,458	6,844	8,239	7,009	7,360	
50 mil+	20,946	18,906	21,227	21,701	25,015	21,478	23,838	
100 mil+	34,204	37,383	42,657	47,120	50,155	52,459	57,199	
500 mil+	81,531	87,395	83,926	88,853	102,566	97,245	99,136	
1 bil+	133,364	140,753	148,256	161,599	168,913	174,061	172,072	
5 bil+	360,589	378,830	386,919	395,885	401,511	392,117	366,774	
10 bil+	1,682,935	1,947,953	1,838,102	2,046,990	2,018,004	1,918,314	2,065,113	
Average of < 100mil	2,254	2,172	2,261	2,348	2,576	2,321	2,342	
Average of 100mil+	155,918	176,488	178,770	197,410	207,702	205,208	221,800	
Average of size-based-taxed corp	142,933	156,730	164,473	183,562	194,995	196,374	205,637	
Sum of < 100mil	19,124,867	19,471,722	21,197,420	22,897,464	25,752,749	23,839,866	24,020,449	
Sum of 100mil+	27,937,351	30,982,408	30,494,588	32,925,941	33,014,237	30,937,139	30,816,866	
Sum of size-based-taxed corp	21,635,740	23,097,234	23,434,096	25,517,018	25,749,090	24,454,405	23,187,636	

Source: Authors' calculation

tions. Comparing this Table with the fourth panel in Table 18, we can see that the amounts shown are lower by the amount of loss carryforward deductions applied, but the trends are similar in both Tables.

Let's now look at the current-period loss carryforward deduction amounts by capital size. Table 20 shows the current-period loss carryforward deduction amounts per corporation by capital size. According to Table 20, the average current-period loss carryforward deduction amount for all corporations is around 4 million yen. The total current-period loss carryforward deduction amount for all corporations was around 7 trillion yen until FY2018, but is in the 5 trillion yen range for FY2019 and 2020.

This all-corporate average includes loss-making corporations with negative income before loss carryforward deductions. The total amount of loss carryforward deductions for profit-making corporations alone was around 3 trillion yen through FY2018, but fell to around 2 trillion yen in FY2019 and FY2020. The amount per corporation ranged from a low of 1.64 million yen in FY2019 to a high of 4.48 million yen in FY2014, all of which were lower than the all-corporate average. This is likely because profit-making corporations have positive income even after loss carryforward deductions, and therefore have smaller deduction amounts. Even if they can use loss carryforward deductions, some corporations do not have many carryover losses, and others have capital of 100 million yen, which, as mentioned above, are subject to deduction limits. Loss-making corporations are able to

Table 20. Loss Carryforward Deduction Per Corporation by Capital Class

All corporations		unit: 10 thousand yen (million yen for total)						
Average	2014	2015	2016	2017	2018	2019	2020	
All	478	432	480	378	426	300	337	
Profit-making corp.	448	347	300	255	303	164	235	
Capital ≤ 100 mil yen	304	305	374	297	359	255	257	
Profit-making corp.	142	131	125	127	216	107	108	
Capital > 100 mil yen	15,213	11,501	10,140	8,069	7,163	5,080	9,591	
Profit-making corp.	14,951	11,400	9,947	7,717	5,825	4,051	9,552	
Size-based-taxed corp.	10,861	9,261	9,251	6,810	6,822	4,746	9,573	
Profit-making corp.	10,886	9,343	9,222	6,801	5,465	3,946	9,644	
Sum								
All	7,615,708	6,933,455	7,834,861	6,302,931	7,144,479	5,085,928	5,665,482	
Profit-making corp.	3,880,676	3,174,421	2,868,199	2,526,785	3,081,009	1,712,716	2,439,612	
Capital ≤ 100 mil yen	4,785,967	4,836,682	6,041,966	4,906,926	5,965,620	4,292,961	4,283,088	
Profit-making corp.	1,201,794	1,173,180	1,171,434	1,239,685	2,155,150	1,102,004	1,112,463	
Capital > 100 mil yen	2,829,741	2,096,773	1,792,896	1,396,005	1,178,858	792,967	1,382,394	
Profit-making corp.	2,678,881	2,001,241	1,696,765	1,287,099	925,860	610,712	1,327,149	
Size-based-taxed corp.	1,680,126	1,396,969	1,347,476	970,013	919,815	602,649	1,102,009	
Profit-making corp.	1,647,776	1,376,940	1,313,979	945,379	721,599	491,414	1,087,429	
Ratios to income before loss carryforward deduction								
Average	2014	2015	2016	2017	2018	2019	2020	
All	13.93%	12.08%	13.16%	10.15%	10.84%	8.50%	9.36%	
Profit-making corp.	7.62%	5.92%	5.26%	4.33%	4.98%	3.03%	4.26%	
Capital ≤ 100 mil yen	31.85%	28.52%	28.76%	22.67%	22.52%	18.08%	20.02%	
Profit-making corp.	5.91%	5.68%	5.24%	5.14%	7.72%	4.42%	4.43%	
Capital > 100 mil yen	9.20%	6.34%	5.55%	4.07%	3.45%	2.50%	4.29%	
Profit-making corp.	8.75%	6.07%	5.27%	3.76%	2.73%	1.94%	4.13%	
Size-based-taxed corp.	7.21%	5.70%	5.44%	3.66%	3.45%	2.41%	4.54%	
Profit-making corp.	7.08%	5.63%	5.31%	3.57%	2.73%	1.97%	4.48%	

Source: Authors' calculation

maximize their loss carryforward deductions, with zero losses/incomes. The current-year loss carryforward deduction amount per corporation is shown in the third Table of Table 18 (for loss-making corporations with zero income after deductions). Although this is the income amount before loss carryforward deduction for loss-making corporations with zero income after loss carryforward deduction, by definition this amount is deducted as a current-period loss carryforward deduction, meaning that the corporation's income after loss carryforward deduction is zero. Therefore, the amounts in the third Table of Table 18 are the same as the current-period loss carryforward deductions (hereinafter, for the current-period loss carryforward deduction amounts for loss-making corporations with zero income after loss carryforward deduction by capital class, please refer to the amounts in the third Table of Table 18).

This point can also be confirmed by looking at the current deduction rate against income before loss carryforward deductions in the lower part of Table 20. Looking at the average for all corporations (strictly speaking, the average for corporations that apply loss carryforward deductions, that is, the average for profit-making corporations and loss-making corporations whose income after loss carryforward deductions is 0 yen), the ratio of current deductions against income before loss carryforward deductions is around 10%. In contrast, the average for profit-making corporations alone is just under 3-8%, which is lower than the average for all corporations. This is because, by definition, loss-making corporations whose income after loss carryforward deductions is 0 yen have a current deduction rate against income before loss carryforward deductions of 100% (and therefore, as it is obviously 100%, it is not reported in Table 20).

Table 20 also shows the current-period loss carryforward deduction amount per corporation by capital size. Table 20 shows that the current-period loss carryforward deduction amount per corporation is higher for corporations with capital of over 100 million yen than for corporations with capital of less than 100 million yen. It also shows that the current-period deduction amount per corporation for size-based-taxed corporations is lower than the average for corporations with capital of over 100 million yen. The reason for this is that the proportion of profit-making corporations is higher for size-based-taxed corporations (see Table 17) compared to corporations with capital of over 100 million yen (see Table 6), which is thought to be why a higher proportion of corporations are facing the current-period loss carryforward deduction limit.

This point can also be confirmed by looking at the current-period deduction rate relative to income before loss carryforward deductions, shown in the bottom row of Table 20. For corporations with capital of 100 million yen or less (both profit-making corporations and loss-making corporations with zero income after loss carryforward deductions), this ratio averages just over 20-30%, but when considering only profit-making corporations, it ranges from just over 4% to just over 7%. For corporations with capital of over 100 million yen, the average never exceeds 10% and is lower than the average for corporations with capital of 100 million yen or less. When considering only profit-making corporations with capital of over 100 million yen, it can be seen that in some years the average is higher than the av-

erage for profit-making corporations with capital of 100 million yen or less. This is likely because, although corporations with capital of 100 million yen or less are eligible for a 100% deduction under the system, there were years in which many corporations had low current-period deduction rates due to the small amount of remaining loss carryforwards. Meanwhile, for corporations with capital of over 100 million yen, despite the deduction limit, there were more corporations that applied current-period deductions closer to that limit than in other years, resulting in a relatively high ratio. This factor is also observed when taking the average of only size-based-taxed corporations among corporations with capital of over 100 million yen, and is the average for corporations that recorded profits in FY2014, 2016, and 2020.

Further details regarding the amount of loss to be deducted in the current period and the amount carried forward to the next period (loss carryforward) are explained in Section VI-3.

V-3. Distribution of Corporate Tax Amount

Table 21 compares the total corporate tax amount by capital class over the years. The total corporate tax amount for all corporations is shown in Table 11. Looking at it by capital size, the total corporate tax amount for corporations with capital of over 100 million yen accounted for more than half of the total for all corporations in every fiscal year. Of these, the amount of corporate tax paid by size-based-taxed corporations during this period accounted for around 45% of the total amount.

According to the second Table of Table 21, which shows the average of corporate tax amount by capital class, the larger the capital size, the higher the corporate tax amount per corporation, except for those with capital of 1 million yen or less (including those with unknown capital). The average for all corporations is shown in Table 11, with the average for corporations with capital of 100 million yen or less being 1.7 million yen, and the average for corporations with capital of over 100 million yen being in the 200 million yen range.

This is an average amount divided by the number of corporations, including loss-making corporations that do not pay corporate tax. The third Table in Table 21 shows the amount of corporate tax paid by profit-making corporations by capital class. We have already confirmed in Table 11 that most of the total corporate tax was paid by profit-making corporations, and the first and third Tables in Table 21 are quite similar, so it is redundant, but we have shown them to keep the consistency of the analyzed corporations.

According to the fourth Table in Table 21, which shows the amount of corporate tax per profit-making corporation, the larger the capital size, the higher the amount of corporate tax per corporation, except for corporations with capital of 1 million yen or less (including corporations with unknown capital). Looking only at profit-making corporations, the average amount of corporate tax per corporation is 4.5 million to just over 5 million yen for corporations with capital of 100 million yen or less, and around 300 million yen for corporations with capital of over 100 million yen. We can see that the average for size-based-taxed corporations is smaller than the average for corporations with capital of over 100 million yen.

What kind of corporations pay more than 5 million yen in corporate tax? Section IV shows that corporations paying more than 5 million yen account for approximately 95% of the total. Table 22 shows the number of corporations paying more than 5 million yen in corporate tax by capital class. According to Table 22, the number of corporations with capital of 100 million yen or less is between just under 110,000 and just over 130,000, while the number of corporations with capital of over 100 million yen is approximately 12,000. Of these, corporations with capital of over 100 million yen account for approximately 10% of corporations paying more than 5 million yen in corporate tax. It can be said that approximately 90% of corporations paying more than 5 million yen in corporate tax are corporations with capital of 100 million yen or less. Table 22 also shows the number of size-based-taxed corporations that pay more than 5 million yen by capital class.

Table 22 also shows the percentage of corporations paying more than 5 million yen in corporate tax by capital size out of all corporations of that capital size. In every fiscal year, corporations with capital of 100 million yen or less paying more than 5 million yen account

Table 21. Corporate Tax Amount by Capital Class

All corporations		unit: million yen						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	383,175	308,010	270,301	297,403	328,461	315,861	349,618	
1 mil +	14,571	15,899	18,582	21,100	22,895	26,832	28,023	
2 mil+	346,341	374,046	396,338	428,440	444,328	482,323	480,174	
5 mil+	828,298	885,553	905,030	978,434	1,020,004	1,054,531	1,042,490	
10 mil+	398,667	423,523	432,346	455,325	474,632	491,048	477,945	
20 mil+	986,651	1,009,740	1,042,723	1,109,688	1,326,492	1,146,239	1,141,127	
50 mil+	1,238,085	1,094,366	1,207,902	1,248,611	1,460,484	1,258,873	1,262,736	
100 mil+	928,253	941,672	1,000,465	1,065,299	1,069,331	1,052,220	1,053,865	
500 mil+	314,600	328,179	298,922	315,905	347,306	306,779	291,139	
1 bil+	945,906	962,246	960,292	1,028,859	1,047,625	1,042,478	959,727	
5 bil+	543,070	543,133	529,626	530,134	496,188	442,542	413,584	
10 bil+	2,795,995	3,212,381	2,898,900	3,321,378	3,301,770	2,955,456	3,086,613	
Sum of < 100mil	4,195,787	4,111,136	4,273,223	4,539,001	5,077,296	4,775,708	4,782,113	
Sum of 100mil+	5,527,824	5,987,611	5,688,207	6,261,574	6,262,220	5,799,475	5,804,928	
Sum of size-based-taxed corp	4,437,180	4,635,930	4,585,852	5,035,456	5,076,696	4,775,548	4,596,247	
Share of < 100mil	43.15%	40.71%	42.90%	42.03%	44.78%	45.16%	45.17%	
Share of 100mil+	56.85%	59.29%	57.10%	57.97%	55.22%	54.84%	54.83%	
Share of size-based-taxed corp	45.63%	45.91%	46.04%	46.62%	44.77%	45.16%	43.41%	

Corporate tax amount per corporation		unit: 10 thousand yen						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	117	86	69	69	70	62	64	
1 mil +	28	28	30	32	33	37	36	
2 mil+	31	34	36	39	41	44	44	
5 mil+	115	124	128	139	146	152	151	
10 mil+	264	283	292	310	325	337	331	
20 mil+	653	669	693	738	880	759	757	
50 mil+	2,534	2,204	2,389	2,429	2,789	2,373	2,365	
100 mil+	5,920	6,247	6,900	7,602	7,922	8,037	8,421	
500 mil+	13,939	14,736	13,737	14,693	16,746	15,255	14,557	
1 bil+	22,733	23,765	24,324	26,517	27,432	27,571	25,967	
5 bil+	60,341	61,931	60,667	62,004	59,211	52,999	48,945	
10 bil+	235,551	273,394	248,406	290,839	288,364	258,118	267,008	
Average of < 100mil	164	159	163	171	189	176	174	
Average of 100mil+	22,855	25,587	25,098	28,410	29,298	27,797	28,720	
Average of size-based-taxed corp	22,044	23,914	24,538	27,856	29,133	28,159	28,210	

Table 21. Corporate Tax Amount by Capital Class (continued)

Profit-making corporations		unit: million yen						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	383,154	307,974	270,270	297,334	328,408	315,784	349,514	
1 mil +	14,564	15,893	18,576	21,083	22,888	26,824	28,016	
2 mil+	345,889	373,898	396,178	428,289	444,106	482,190	479,995	
5 mil+	828,021	885,323	904,766	978,095	1,019,713	1,054,130	1,042,200	
10 mil+	398,551	423,399	432,141	455,229	474,548	490,944	477,867	
20 mil+	986,406	1,009,508	1,042,433	1,109,420	1,326,238	1,145,943	1,141,025	
50 mil+	1,237,740	1,094,058	1,207,760	1,248,517	1,460,359	1,258,638	1,262,212	
100 mil+	928,165	941,496	1,000,367	1,065,078	1,069,015	1,051,984	1,053,787	
500 mil+	314,599	328,112	298,902	315,886	347,227	306,747	291,129	
1 bil+	945,825	962,223	960,269	1,028,813	1,047,558	1,042,388	959,623	
5 bil+	543,070	543,133	529,626	530,132	496,187	442,542	413,584	
10 bil+	2,795,995	3,212,179	2,898,900	3,321,378	3,301,769	2,955,408	3,086,613	
Sum of < 100mil	4,194,326	4,110,053	4,272,124	4,537,967	5,076,260	4,774,453	4,780,829	
Sum of 100mil+	5,527,655	5,987,143	5,688,065	6,261,287	6,261,756	5,799,069	5,804,735	
Sum of size-based-taxed corp	4,437,013	4,635,473	4,585,736	5,035,173	5,076,233	4,775,164	4,596,072	
Share of < 100mil	43.14%	40.70%	42.89%	42.02%	44.77%	45.15%	45.16%	
Share of 100mil+	56.86%	59.30%	57.11%	57.98%	55.23%	54.85%	54.84%	
Share of size-based-taxed corp	45.64%	45.91%	46.04%	46.63%	44.77%	45.16%	43.42%	

Corporate tax amount per corporation (profit-making)		unit: 10 thousand yen						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	321	229	181	180	184	161	161	
1 mil +	81	79	84	88	90	99	95	
2 mil+	111	114	116	122	125	132	132	
5 mil+	350	361	358	378	391	402	421	
10 mil+	612	630	633	650	671	696	720	
20 mil+	1,358	1,349	1,365	1,421	1,681	1,462	1,545	
50 mil+	4,854	4,130	4,411	4,383	5,042	4,368	4,672	
100 mil+	8,209	8,590	9,459	10,386	11,025	11,495	12,629	
500 mil+	18,615	19,222	17,750	18,814	21,963	20,504	20,975	
1 bil+	28,863	29,580	30,245	32,692	34,505	35,759	35,450	
5 bil+	76,705	77,369	77,093	78,191	76,219	71,725	69,980	
10 bil+	298,399	344,654	309,712	361,019	354,648	329,845	357,247	
Average of < 100mil	494	458	456	465	508	465	466	
Average of 100mil+	30,850	34,105	33,345	37,540	39,395	38,466	41,779	
Average of size-based-taxed corp	29,312	31,455	32,185	36,222	38,442	38,345	40,760	

Source: Authors' calculation

for around 5% of corporations with capital of over 100 million yen, while the percentage is around 55% of corporations with capital of over 100 million yen. The percentage of size-based-taxed corporations that pay more than 5 million yen is slightly higher than the percentage of corporations with capital of over 100 million yen. It can also be seen that around 85% of corporations with capital of over 100 million yen that pay more than 5 million yen are size-based-taxed.

Table 23 shows how much corporate taxes are paid by corporations that pay individually over 5 million yen in each capital class. Table 23, which shows the total amount of corporate tax paid by corporations that pay over 5 million yen in each capital class, shows that around 60% of the corporate tax paid by corporations that pay over 5 million yen was paid by corporations with capital of over 100 million yen. Of the total corporate tax paid by corporations that pay over 5 million yen in corporate tax, roughly half were paid by size-based-taxed corporations. Of the corporations that pay over 5 million yen in corporate tax,

Table 22. The Number of Corporations Paying Corporate Tax more than 5 Million Yen by Capital Class

All corporations		Unit: corporations						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	4,264	5,119	5,792	6,563	7,334	8,481	8,950	
1 mil +	436	510	572	596	745	818	911	
2 mil+	12,571	14,008	14,665	15,562	16,209	17,644	17,331	
5 mil+	32,346	34,982	35,830	37,962	38,881	39,915	38,151	
10 mil+	15,878	17,044	17,607	18,632	19,126	19,715	19,493	
20 mil+	27,333	28,904	29,908	31,498	31,683	32,007	31,250	
50 mil+	15,077	15,957	16,646	17,558	17,849	17,692	16,674	
100 mil+	7,638	7,725	7,656	7,590	7,186	6,849	6,271	
500 mil+	1,320	1,378	1,381	1,364	1,298	1,211	1,118	
1 bil+	2,631	2,687	2,702	2,637	2,532	2,338	2,173	
5 bil+	589	603	581	572	545	495	470	
10 bil+	709	704	683	680	673	610	581	
Sum of < 100mil	107,905	116,524	121,020	128,371	131,827	136,272	132,760	
Sum of 100mil+	12,887	13,097	13,003	12,843	12,234	11,503	10,613	
Sum of size-based-taxed corp	11,145	11,246	11,162	11,077	10,549	9,979	9,058	
Total	120,792	129,621	134,023	141,214	144,061	147,775	143,373	
Share of < 100mil	89.33%	89.90%	90.30%	90.91%	91.51%	92.22%	92.60%	
Share of 100mil+	10.67%	10.10%	9.70%	9.09%	8.49%	7.78%	7.40%	
Share of size-based-taxed corp	9.23%	8.68%	8.33%	7.84%	7.32%	6.75%	6.32%	
Share among < 100 mil	4.21%	4.50%	4.62%	4.84%	4.92%	5.01%	4.83%	
Share among 100 mil+	53.28%	55.97%	57.37%	58.27%	57.24%	55.13%	52.51%	
Share among size-based-taxed corp	55.37%	58.01%	59.72%	61.28%	60.54%	58.84%	55.59%	

Source: Authors' calculation

Table 23. Corporate Tax Amount of Corporations Paying Corporate Tax more than 5 Million Yen by Capital Class

All corporations		unit: million yen						
Capital class	2014	2015	2016	2017	2018	2019	2020	
between 0 and 1 mil. yen	338,383	254,808	208,446	227,113	250,114	225,963	247,095	
1 mil +	7,874	7,918	9,322	10,604	11,709	13,995	13,469	
2 mil+	184,687	197,942	207,392	227,640	236,531	262,899	258,291	
5 mil+	656,980	704,421	712,009	778,609	815,302	847,294	846,561	
10 mil+	345,181	367,157	373,189	393,796	412,827	428,757	419,712	
20 mil+	931,693	952,520	982,246	1,048,498	1,263,670	1,084,565	1,083,841	
50 mil+	1,223,347	1,079,340	1,192,035	1,232,358	1,444,127	1,242,711	1,247,593	
100 mil+	922,787	936,697	995,771	1,060,940	1,065,223	1,048,504	1,050,477	
500 mil+	314,068	327,689	298,486	315,489	346,940	306,448	290,794	
1 bil+	945,237	961,686	959,901	1,028,433	1,047,196	1,042,050	959,327	
5 bil+	543,010	543,083	529,591	530,080	496,136	442,480	413,540	
10 bil+	2,795,922	3,212,295	2,898,850	3,321,319	3,301,703	2,955,394	3,086,535	
Sum of < 100mil	3,688,146	3,564,106	3,684,640	3,918,619	4,434,281	4,106,183	4,116,563	
Sum of 100mil+	5,521,024	5,981,451	5,682,599	6,256,261	6,257,198	5,794,876	5,800,673	
Sum of size-based-taxed corp	4,431,535	4,630,763	4,581,197	5,031,161	5,072,641	4,771,908	4,592,905	
Total	9,209,169	9,545,557	9,367,239	10,174,880	10,691,479	9,901,060	9,917,236	
Share of < 100mil	40.05%	37.34%	39.34%	38.51%	41.47%	41.47%	41.51%	
Share of 100mil+	59.95%	62.66%	60.66%	61.49%	58.53%	58.53%	58.49%	
Share of size-based-taxed corp	48.12%	48.51%	48.91%	49.45%	47.45%	48.20%	46.31%	
Share among < 100 mil	87.90%	86.69%	86.23%	86.33%	87.34%	85.98%	86.08%	
Share among 100 mil+	99.88%	99.90%	99.90%	99.92%	99.92%	99.92%	99.93%	
Share among size-based-taxed corp	99.87%	99.89%	99.90%	99.91%	99.92%	99.92%	99.93%	

Source: Authors' calculation

corporations with capital of over 100 million yen account for just under 10% in terms of number, but in terms of the amount of corporate tax paid, they account for around 60%.

The figure also shows the percentage of corporate tax paid by corporations with capital of over 5 million yen out of the total amount of corporate tax paid by all corporations of that

capital size. In every fiscal year, the amount of corporate tax paid by corporations with capital of 100 million yen or less that paid over 5 million yen accounted for just under 90% of the total amount, while for corporations with capital of over 100 million yen and size-based-taxed corporations the figure was over 99%. It suggests that almost all corporations with capital of over 100 million yen paid over 5 million yen in corporate tax.

VI. Loss-making Corporations by Industry

VI-1. Distribution of the Number of Corporations

Section VI examines the loss-making corporations by industry for which information is available from corporate tax returns. The industry classification method follows the 17-industry classification method used in the Corporation Sample Survey. Table 24 compares the number of corporations by industry over the years, categorizing them in the same way as Table 15 for all corporations, profit-making corporations, and loss-making corporations.

We divided all corporations into 17 industry categories and showed the number of corporations, as shown in the first Table of Table 24. The industry with the highest proportion of corporations was the service industry, followed by the construction industry. The third-highest proportion of corporations was retail until FY2016, but has been real estate

Table 24. The Number of Corporations by Industry

The number of corporations							
All corporations	Unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	32,746	33,903	35,411	36,956	38,228	39,398	40,163
Mining	3,501	3,473	3,444	3,364	3,324	3,231	3,132
Construction	405,307	409,914	415,665	424,026	428,883	433,647	439,316
Textile	26,799	26,156	25,623	25,095	24,493	23,874	23,107
Chemical	32,639	32,191	31,818	31,343	30,913	30,621	30,263
Steel and metals	49,900	49,188	48,631	48,028	47,396	46,801	46,135
Machinery	76,789	75,818	75,010	74,048	73,175	72,435	71,257
Food manufacturing	41,936	41,634	41,546	41,377	41,087	40,885	40,556
Publishing and printing	33,326	32,588	31,836	31,040	30,322	29,626	28,889
Other manufacturing	67,208	66,608	66,098	65,579	64,973	64,427	63,696
Wholesale trade	235,294	233,315	231,806	230,659	228,803	227,861	225,783
Retail trade	321,900	318,910	315,594	311,821	307,997	304,984	300,498
Restaurants and hotels	117,920	118,583	119,910	120,838	121,936	123,626	124,480
Finance and insurance	48,471	48,839	48,891	49,126	49,593	50,182	50,636
Real estate	296,568	303,935	312,833	322,653	332,557	341,597	352,058
Transportation, communications and public utilities	81,686	83,320	84,977	86,394	87,985	89,874	91,141
Service	716,840	734,527	752,547	771,014	790,905	816,405	836,754
Loss-making corporations (loss < 0)							
	Unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	13,110	11,716	11,567	12,777	14,978	15,816	15,330
Mining	1,179	1,296	1,297	1,153	1,214	1,134	1,070
Construction	122,094	135,294	137,290	138,596	137,378	134,042	144,124
Textile	11,312	11,134	10,692	10,723	10,483	10,638	10,930
Chemical	11,733	12,184	11,526	10,902	10,971	11,089	11,869
Steel and metals	15,292	15,780	16,062	14,534	13,446	15,768	19,859
Machinery	25,576	25,353	25,876	23,900	22,345	26,101	30,017
Food manufacturing	19,057	17,537	16,891	17,278	18,216	18,345	19,371
Publishing and printing	14,623	14,394	13,909	13,505	13,475	13,068	13,411
Other manufacturing	25,888	26,700	26,034	25,158	24,989	25,901	27,171
Wholesale trade	89,402	90,254	87,667	83,667	83,576	86,346	88,198
Retail trade	146,034	141,750	138,185	134,993	135,506	131,931	123,851
Restaurants and hotels	54,962	53,487	53,831	54,659	56,885	57,424	73,392
Finance and insurance	19,244	18,846	20,215	20,318	20,956	20,667	19,128
Real estate	106,491	108,551	108,996	109,926	112,481	114,714	113,686
Transportation, communications and public utilities	27,557	25,685	26,708	28,531	30,420	32,489	38,747
Service	291,281	298,441	302,186	303,830	316,788	327,585	334,356

Table 24. The Number of Corporations by Industry (continued)

Loss-making corporations (loss = 0)							Unit: corporations
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	8,080	8,526	8,294	7,771	7,310	7,687	8,477
Mining	1,029	899	875	902	801	821	797
Construction	128,544	110,537	105,486	104,014	103,159	101,249	95,503
Textile	9,097	8,405	8,187	7,675	7,294	6,785	6,405
Chemical	9,476	8,693	8,655	8,522	7,951	7,717	7,194
Steel and metals	17,436	15,607	14,284	14,098	13,433	11,323	9,579
Machinery	24,959	22,969	20,898	20,773	19,890	17,178	15,409
Food manufacturing	11,908	12,316	12,323	11,654	10,987	10,878	10,276
Publishing and printing	11,358	10,672	10,322	9,957	9,492	9,105	8,606
Other manufacturing	22,242	20,206	19,714	19,199	18,462	17,431	16,605
Wholesale trade	63,856	59,780	59,261	59,486	56,748	53,899	53,480
Retail trade	92,914	90,563	88,894	87,861	84,913	84,100	85,632
Restaurants and hotels	36,649	36,087	35,092	34,493	33,351	33,877	28,081
Finance and insurance	11,100	10,742	9,819	10,188	10,091	10,528	11,193
Real estate	74,894	72,897	74,139	75,522	76,049	76,377	79,756
Transportation, communications and public utilities	23,384	23,187	21,781	20,841	20,372	20,103	18,005
Service	180,717	178,247	180,040	184,256	182,563	185,011	189,008

Profit-making corporations							Unit: corporations
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	11,556	13,661	15,550	16,408	15,940	15,895	16,356
Mining	1,293	1,278	1,272	1,309	1,309	1,276	1,265
Construction	154,669	164,083	172,889	181,416	188,346	198,356	199,689
Textile	6,390	6,617	6,744	6,697	6,716	6,451	5,772
Chemical	11,430	11,314	11,637	11,919	11,991	11,815	11,200
Steel and metals	17,172	17,801	18,285	19,396	20,517	19,710	16,697
Machinery	26,254	27,496	28,236	29,375	30,940	29,156	25,831
Food manufacturing	10,971	11,781	12,332	12,445	11,884	11,662	10,909
Publishing and printing	7,345	7,522	7,605	7,578	7,355	7,453	6,872
Other manufacturing	19,078	19,702	20,350	21,222	21,522	21,095	19,920
Wholesale trade	82,036	83,281	84,878	87,506	88,479	87,616	84,105
Retail trade	82,952	86,597	88,515	88,967	87,578	88,953	91,015
Restaurants and hotels	26,309	29,009	30,987	31,686	31,700	32,325	23,007
Finance and insurance	18,127	19,251	18,857	18,620	18,546	18,987	20,315
Real estate	115,183	122,487	129,698	137,205	144,027	150,506	158,616
Transportation, communications and public utilities	30,745	34,448	36,488	37,022	37,193	37,282	34,389
Service	244,842	257,839	270,321	282,928	291,554	303,809	313,390

Shares							Unit: %
Total	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	1.26	1.30	1.34	1.38	1.41	1.44	1.45
Mining	0.14	0.13	0.13	0.13	0.12	0.12	0.11
Construction	15.66	15.69	15.74	15.86	15.87	15.83	15.87
Textile	1.04	1.00	0.97	0.94	0.91	0.87	0.83
Chemical	1.26	1.23	1.20	1.17	1.14	1.12	1.09
Steel and metals	1.93	1.88	1.84	1.80	1.75	1.71	1.67
Machinery	2.97	2.90	2.84	2.77	2.71	2.64	2.57
Food manufacturing	1.62	1.59	1.57	1.55	1.52	1.49	1.47
Publishing and printing	1.29	1.25	1.21	1.16	1.12	1.08	1.04
Other manufacturing	2.60	2.55	2.50	2.45	2.40	2.35	2.30
Wholesale trade	9.09	8.93	8.78	8.63	8.47	8.32	8.16
Retail trade	12.43	12.21	11.95	11.66	11.40	11.13	10.86
Restaurants and hotels	4.55	4.54	4.54	4.52	4.51	4.51	4.50
Finance and insurance	1.87	1.87	1.85	1.84	1.84	1.83	1.83
Real estate	11.46	11.63	11.84	12.07	12.31	12.47	12.72
Transportation, communications and public utilities	3.16	3.19	3.22	3.23	3.26	3.28	3.29
Service	27.69	28.11	28.49	28.84	29.26	29.80	30.23

Loss-making corporations (loss < 0)							Unit: %
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	40.04	34.56	32.66	34.57	39.18	40.14	38.17
Mining	33.68	37.32	37.66	34.27	36.52	35.10	34.16
Construction	30.12	33.01	33.03	32.69	32.03	30.91	32.81
Textile	42.21	42.57	41.73	42.73	42.80	44.56	47.30
Chemical	35.95	37.85	36.22	34.78	35.49	36.21	39.22
Steel and metals	30.65	32.08	33.03	30.26	28.37	33.69	43.05
Machinery	33.31	33.44	34.50	32.28	30.54	36.03	42.12
Food manufacturing	45.44	42.12	40.66	41.76	44.34	44.87	47.76
Publishing and printing	43.88	44.17	43.69	43.51	44.44	44.11	46.42
Other manufacturing	38.52	40.09	39.39	38.36	38.46	40.20	42.66
Wholesale trade	38.00	38.68	37.82	36.27	36.53	37.89	39.06
Retail trade	45.37	44.45	43.79	43.29	44.00	43.26	41.22
Restaurants and hotels	46.61	45.11	44.89	45.23	46.65	46.45	58.96
Finance and insurance	39.70	38.59	41.35	41.36	42.26	41.18	37.78
Real estate	35.91	35.72	34.84	34.07	33.82	33.58	32.29
Transportation, communications and public utilities	33.74	30.83	31.43	33.02	34.57	36.15	42.51
Service	40.63	40.63	40.16	39.41	40.05	40.13	39.96

Source: Authors' calculation

Table 24. The Number of Corporations by Industry (continued)

Loss-making corporations (loss = 0)							Unit: %
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	24.67	25.15	23.42	21.03	19.12	19.51	21.11
Mining	29.39	25.89	25.41	26.81	24.10	25.41	25.45
Construction	31.72	26.97	25.38	24.53	24.05	23.35	21.74
Textile	33.95	32.13	31.95	30.58	29.78	28.42	27.72
Chemical	29.03	27.00	27.20	27.19	25.72	25.20	23.77
Steel and metals	34.94	31.73	29.37	29.35	28.34	24.19	20.76
Machinery	32.50	30.29	27.86	28.05	27.18	23.72	21.62
Food manufacturing	28.40	29.58	29.66	28.17	26.74	26.61	25.34
Publishing and printing	34.08	32.75	32.42	32.08	31.30	30.73	29.79
Other manufacturing	33.09	30.34	29.83	29.28	28.41	27.06	26.07
Wholesale trade	27.14	25.62	25.56	25.79	24.80	23.65	23.69
Retail trade	28.86	28.40	28.17	28.18	27.57	27.58	28.50
Restaurants and hotels	31.08	30.43	29.27	28.54	27.35	27.40	22.56
Finance and insurance	22.90	21.99	20.08	20.74	20.35	20.98	22.10
Real estate	25.25	23.98	23.70	23.41	22.87	22.36	22.65
Transportation, communications and public utilities	28.63	27.83	25.63	24.12	23.15	22.37	19.76
Service	25.21	24.27	23.92	23.90	23.08	22.66	22.59

Profit-making corporations							Unit: %
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	35.29	40.29	43.91	44.40	41.70	40.34	40.72
Mining	36.93	36.80	36.93	38.91	39.38	39.49	40.39
Construction	38.16	40.03	41.59	42.78	43.92	45.74	45.45
Textile	23.84	25.30	26.32	26.69	27.42	27.02	24.98
Chemical	35.02	35.15	36.57	38.03	38.79	38.58	37.01
Steel and metals	34.41	36.19	37.60	40.38	43.29	42.11	36.19
Machinery	34.19	36.27	37.64	39.67	42.28	40.25	36.25
Food manufacturing	26.16	28.30	29.68	30.08	28.92	28.52	26.90
Publishing and printing	22.04	23.08	23.89	24.41	24.26	25.16	23.79
Other manufacturing	28.39	29.58	30.79	32.36	33.12	32.74	31.27
Wholesale trade	34.87	35.69	36.62	37.94	38.67	38.45	37.25
Retail trade	25.77	27.15	28.05	28.53	28.43	29.17	30.29
Restaurants and hotels	22.31	24.46	25.84	26.22	26.00	26.15	18.48
Finance and insurance	37.40	39.42	38.57	37.90	37.40	37.84	40.12
Real estate	38.84	40.30	41.46	42.52	43.31	44.06	45.05
Transportation, communications and public utilities	37.64	41.34	42.94	42.85	42.27	41.48	37.73
Service	34.16	35.10	35.92	36.70	36.86	37.21	37.45

Source: Authors' calculation

since FY2017. Regarding the trend in the number of corporations, the number of corporations has consistently increased in the agriculture, forestry and fisheries, construction, restaurant and hotel, finance and insurance, real estate, transportation and communications, public utilities, and service industries over this period, while the number of corporations has consistently decreased in the mining, textile, chemical, steel and metals, machinery, food manufacturing, publishing and printing, other manufacturing, wholesale, and retail industries. Note that this analysis does not include consolidated corporations, and therefore includes fluctuations in the number of corporations due to their exclusion from the analyzed data after the year in which they became consolidated corporations.

When dividing corporations into profit-making and loss-making, Table 24 shows that the number of loss-making corporations, which have negative income after deducting loss carryforward, continued to increase during this period only in the service industry, while other industries fluctuated across fiscal years. The number of profit-making corporations continued to increase only in the construction, real estate and service industries, while other industries fluctuated across fiscal years.

Tables 6 to 8 of Table 24 show the share of these corporations for each industry. The share of loss-making corporations, whose income after loss carryforward deduction is negative, remained at roughly the same level in most industries even before FY2019. This share has risen in FY2020 due to the COVID-19 pandemic. In particular, it has risen to just under

60% in the restaurant and hotel industry. The high share of loss-making corporations in the restaurant and hotel industry is thought to be due to self-restraint and travel restrictions imposed in FY2020 because of the COVID-19 pandemic.

The proportion of loss-making corporations in each industry with zero income after loss carryforward deduction is shown for all corporations in Table 2, but Table 24 shows that this differs by industry. Compared with the proportion for all corporations in Table 2, the proportion of loss-making corporations with zero income after loss carryforward deduction was high in textile industry, chemical industry, food manufacturing, publishing and printing, and other manufacturing industries in every fiscal year, and low in finance and insurance, real estate, and services.

Looking at the proportion of profit-making corporations in each industry, compared to the proportion for all corporations shown in Table 2, the proportion of profit-making corporations is high in agriculture, forestry and fisheries, mining, construction, real estate, and transportation, communications and public utilities in every fiscal year, while it is low in textiles, food manufacturing, publishing and printing, other manufacturing, retail, and restaurants and hotels.

When viewed by industry, the trend over this period appears to be relatively stable. This may be because the distribution of capital size by industry has not changed significantly over this period. To confirm this, Table 25 compares the number of corporations by capital size by industry over the years. Table 25 shows the number of corporations by industry with capital of 10 million yen or less, over 10 million yen but up to 100 million yen, and over 100 million yen.

Looking at the proportion of corporations with capital of over 100 million yen out of all corporations by industry, during this period the highest was the finance and insurance industry, followed by the chemical industry. The industry with the third highest proportion was

Table 25. The Number of Corporations by Industry and Capital Size

The number of corporations		Unit: corporations						
Capital with 10 million yen or less (or unknown)		2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries		28,814	29,914	31,304	32,754	33,927	35,031	35,779
Mining		2,322	2,308	2,294	2,246	2,227	2,159	2,084
Construction		342,154	346,688	352,471	360,694	365,384	369,908	375,238
Textile		22,460	21,986	21,586	21,179	20,661	20,130	19,493
Chemical		22,972	22,624	22,349	22,027	21,690	21,453	21,187
Steel and metals		40,772	40,191	39,737	39,236	38,704	38,202	37,623
Machinery		60,561	59,809	59,149	58,332	57,551	56,906	55,911
Food manufacturing		33,506	33,310	33,343	33,229	33,049	32,921	32,672
Publishing and printing		28,076	27,409	26,772	26,086	25,455	24,856	24,266
Other manufacturing		56,551	56,086	55,706	55,269	54,775	54,326	53,724
Wholesale trade		185,504	184,184	183,494	183,044	181,714	181,324	180,088
Retail trade		294,717	292,025	289,145	285,850	282,407	279,832	275,930
Restaurants and hotels		108,300	109,089	110,564	111,619	112,829	114,600	115,691
Finance and insurance		38,879	39,380	39,480	39,671	40,088	40,704	41,174
Real estate		261,781	269,019	277,922	287,722	297,549	306,389	316,356
Transportation, communications and public utilities		57,441	59,259	61,023	62,494	64,165	66,155	67,635
Service		628,649	646,020	663,720	681,302	699,874	724,151	744,368

Table 25. The Number of Corporations by Industry and Capital Size (continued)

Capital with over 10 million yen but up to 100 million yen								Unit: corporations
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	3,616	3,680	3,785	3,886	3,996	4,072	4,092	
Mining	1,065	1,061	1,054	1,032	1,021	1,006	990	
Construction	62,252	62,363	62,370	62,519	62,704	62,979	63,350	
Textile	4,176	4,017	3,887	3,777	3,702	3,621	3,500	
Chemical	8,366	8,307	8,246	8,151	8,080	8,044	7,991	
Steel and metals	8,471	8,375	8,301	8,223	8,160	8,089	8,019	
Machinery	14,440	14,324	14,255	14,170	14,103	14,049	13,929	
Food manufacturing	7,776	7,693	7,614	7,591	7,495	7,460	7,409	
Publishing and printing	4,972	4,922	4,825	4,730	4,667	4,580	4,442	
Other manufacturing	10,002	9,906	9,808	9,748	9,651	9,569	9,454	
Wholesale trade	46,965	46,426	45,712	45,107	44,683	44,233	43,461	
Retail trade	25,905	25,631	25,270	24,843	24,541	24,157	23,630	
Restaurants and hotels	9,168	9,077	8,954	8,852	8,775	8,719	8,532	
Finance and insurance	5,837	5,770	5,769	5,831	5,897	5,917	5,898	
Real estate	33,228	33,416	33,474	33,529	33,689	33,925	34,463	
Transportation, communications and public utilities	22,382	22,243	22,173	22,153	22,116	22,058	21,906	
Service	82,564	82,989	83,420	84,425	85,867	87,085	87,367	

Capital with over 100 million yen								Unit: corporations
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	316	309	322	316	305	295	292	
Mining	114	104	96	86	76	66	58	
Construction	901	863	824	813	795	760	728	
Textile	163	153	150	139	130	123	114	
Chemical	1,301	1,260	1,223	1,165	1,143	1,124	1,085	
Steel and metals	657	622	593	569	532	510	493	
Machinery	1,788	1,685	1,606	1,546	1,521	1,480	1,417	
Food manufacturing	654	631	589	557	543	504	475	
Publishing and printing	278	257	239	224	200	190	181	
Other manufacturing	655	616	584	562	547	532	518	
Wholesale trade	2,825	2,705	2,600	2,508	2,406	2,304	2,234	
Retail trade	1,278	1,254	1,179	1,128	1,049	995	938	
Restaurants and hotels	452	417	392	367	332	307	257	
Finance and insurance	3,755	3,689	3,642	3,624	3,608	3,561	3,564	
Real estate	1,559	1,500	1,437	1,402	1,319	1,283	1,239	
Transportation, communications and public utilities	1,863	1,818	1,781	1,747	1,704	1,661	1,600	
Service	5,627	5,518	5,407	5,287	5,164	5,169	5,019	

Share in each industry								Unit: %
Capital with 10 million yen or less (or unknown)								
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	87.99	88.23	88.40	88.63	88.75	88.92	89.08	
Mining	66.32	66.46	66.61	66.77	67.00	66.82	66.54	
Construction	84.42	84.58	84.80	85.06	85.19	85.30	85.41	
Textile	83.81	84.06	84.24	84.40	84.35	84.32	84.36	
Chemical	70.38	70.28	70.24	70.28	70.16	70.06	70.01	
Steel and metals	81.71	81.71	81.71	81.69	81.66	81.63	81.55	
Machinery	78.87	78.88	78.85	78.78	78.65	78.56	78.46	
Food manufacturing	79.90	80.01	80.26	80.31	80.44	80.52	80.56	
Publishing and printing	84.25	84.11	84.09	84.04	83.95	83.90	84.00	
Other manufacturing	84.14	84.20	84.28	84.28	84.30	84.32	84.34	
Wholesale trade	78.84	78.94	79.16	79.36	79.42	79.58	79.76	
Retail trade	91.56	91.57	91.62	91.67	91.69	91.75	91.82	
Restaurants and hotels	91.84	91.99	92.21	92.37	92.53	92.70	92.94	
Finance and insurance	80.21	80.63	80.75	80.75	80.83	81.11	81.31	
Real estate	88.27	88.51	88.84	89.17	89.47	89.69	89.86	
Transportation, communications and public utilities	70.32	71.12	71.81	72.34	72.93	73.61	74.21	
Service	87.70	87.95	88.20	88.36	88.49	88.70	88.96	

Table 25. The Number of Corporations by Industry and Capital Size (continued)

Capital with over 10 million yen but up to 100 million yen								Unit: %
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	11.04	10.85	10.69	10.52	10.45	10.34	10.19	
Mining	30.42	30.55	30.60	30.68	30.72	31.14	31.61	
Construction	15.36	15.21	15.00	14.74	14.62	14.52	14.42	
Textile	15.58	15.36	15.17	15.05	15.11	15.17	15.15	
Chemical	25.63	25.81	25.92	26.01	26.14	26.27	26.41	
Steel and metals	16.98	17.03	17.07	17.12	17.22	17.28	17.38	
Machinery	18.80	18.89	19.00	19.14	19.27	19.40	19.55	
Food manufacturing	18.54	18.48	18.33	18.35	18.24	18.25	18.27	
Publishing and printing	14.92	15.10	15.16	15.24	15.39	15.46	15.38	
Other manufacturing	14.88	14.87	14.84	14.86	14.85	14.85	14.84	
Wholesale trade	19.96	19.90	19.72	19.56	19.53	19.41	19.25	
Retail trade	8.05	8.04	8.01	7.97	7.97	7.92	7.86	
Restaurants and hotels	7.77	7.65	7.47	7.33	7.20	7.05	6.85	
Finance and insurance	12.04	11.81	11.80	11.87	11.89	11.79	11.65	
Real estate	11.20	10.99	10.70	10.39	10.13	9.93	9.79	
Transportation, communications and public utilities	27.40	26.70	26.09	25.64	25.14	24.54	24.04	
Service	11.52	11.30	11.09	10.95	10.86	10.67	10.44	

Capital with over 100 million yen								Unit: %
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	0.97	0.91	0.91	0.86	0.80	0.75	0.73	
Mining	3.26	2.99	2.79	2.56	2.29	2.04	1.85	
Construction	0.22	0.21	0.20	0.19	0.19	0.18	0.17	
Textile	0.61	0.58	0.59	0.55	0.53	0.52	0.49	
Chemical	3.99	3.91	3.84	3.72	3.70	3.67	3.59	
Steel and metals	1.32	1.26	1.22	1.18	1.12	1.09	1.07	
Machinery	2.33	2.22	2.14	2.09	2.08	2.04	1.99	
Food manufacturing	1.56	1.52	1.42	1.35	1.32	1.23	1.17	
Publishing and printing	0.83	0.79	0.75	0.72	0.66	0.64	0.63	
Other manufacturing	0.97	0.92	0.88	0.86	0.84	0.83	0.81	
Wholesale trade	1.20	1.16	1.12	1.09	1.05	1.01	0.99	
Retail trade	0.40	0.39	0.37	0.36	0.34	0.33	0.31	
Restaurants and hotels	0.38	0.35	0.33	0.30	0.27	0.25	0.21	
Finance and insurance	7.75	7.55	7.45	7.38	7.28	7.10	7.04	
Real estate	0.53	0.49	0.46	0.43	0.40	0.38	0.35	
Transportation, communications and public utilities	2.28	2.18	2.10	2.02	1.94	1.85	1.76	
Service	0.78	0.75	0.72	0.69	0.65	0.63	0.60	

Source: Authors' calculation

mining until FY2018, but has been machinery since FY2019. On the other hand, the lowest proportion was construction, followed by restaurant and hotel, and retail. The ranking of these industries has not changed much over this period. However, as can be seen in Table 6, the proportion of corporations with capital of over 100 million yen out of all corporations has been on an overall downward trend over this period, and Table 25 confirms that there has been no significant change in line with this trend.

VI-2. Income and Loss Distribution

As in Sections III and V, Table 26 compares income before loss carryforward deductions by industry over the years. The total for all corporations is shown in Table 3.

Looking at income before loss carryforward deduction, which we consider to be the amount that most closely represents current profits or losses in corporate accounting, based

Table 26. Income before Loss Carryforward Deduction by Industry

All corporations								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	95,191	176,384	208,412	210,542	120,472	96,076	111,486	
Mining	867,650	383,063	348,965	318,292	470,494	552,456	45,131	
Construction	3,306,806	3,839,894	4,319,535	4,715,527	4,882,996	4,991,189	4,866,220	
Textile	185,650	190,098	178,938	226,157	188,997	188,080	48,188	
Chemical	2,828,061	3,000,406	3,354,944	3,644,781	3,524,525	3,374,423	3,329,774	
Steel and metals	1,349,533	1,031,962	1,048,023	1,340,520	1,256,379	1,059,314	678,553	
Machinery	4,381,152	3,465,143	3,393,395	3,710,030	4,839,845	2,562,307	2,214,686	
Food manufacturing	913,164	1,170,121	1,312,590	1,398,429	1,269,969	1,161,585	1,016,160	
Publishing and printing	303,302	367,654	370,842	360,771	349,611	481,215	317,917	
Other manufacturing	1,414,745	1,421,515	1,454,574	1,770,474	1,878,565	1,621,347	1,928,657	
Wholesale trade	3,801,456	4,174,732	4,519,004	5,278,746	5,213,189	4,894,083	4,173,024	
Retail trade	2,433,845	2,929,636	2,660,035	2,806,314	2,727,488	2,662,299	2,873,339	
Restaurants and hotels	353,478	539,618	580,584	583,611	544,455	359,704	-1,367,349	
Finance and insurance	7,453,072	8,362,224	9,295,429	8,275,333	9,130,686	5,913,194	8,231,723	
Real estate	2,455,994	2,931,840	3,407,535	3,944,624	4,197,855	4,132,115	3,837,119	
Transportation, communications and public utilities	4,326,354	5,823,910	5,646,392	5,881,597	5,884,030	5,871,699	2,358,245	
Service	6,762,331	7,177,476	7,511,888	6,014,344	8,773,905	8,060,669	7,543,510	

Loss-making corporations (loss < 0)								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	-107,080	-83,179	-91,062	-102,120	-131,629	-150,529	-165,377	
Mining	-103,791	-67,760	-70,093	-77,681	-75,407	-57,350	-156,208	
Construction	-669,970	-713,137	-715,005	-687,783	-711,068	-832,362	-929,561	
Textile	-112,670	-115,325	-121,338	-97,833	-107,362	-105,178	-188,781	
Chemical	-480,398	-616,371	-382,486	-342,217	-271,631	-426,020	-384,386	
Steel and metals	-240,284	-251,901	-263,972	-172,191	-183,770	-228,498	-381,103	
Machinery	-731,298	-912,210	-819,576	-1,414,935	-722,852	-1,341,216	-1,510,587	
Food manufacturing	-234,862	-203,576	-191,733	-189,454	-207,695	-232,401	-352,229	
Publishing and printing	-143,941	-134,520	-130,215	-110,942	-133,286	-137,817	-237,787	
Other manufacturing	-300,924	-301,847	-297,668	-292,139	-279,686	-348,710	-373,452	
Wholesale trade	-1,224,309	-1,080,962	-963,684	-749,216	-803,644	-904,104	-1,337,302	
Retail trade	-887,436	-857,162	-847,376	-804,300	-872,605	-926,735	-1,402,205	
Restaurants and hotels	-418,772	-379,704	-369,766	-392,801	-409,831	-500,451	-1,760,949	
Finance and insurance	-2,022,232	-1,043,767	-980,289	-531,187	-582,270	-1,091,189	-790,831	
Real estate	-850,956	-794,359	-766,183	-692,047	-751,797	-695,050	-1,000,675	
Transportation, communications and public utilities	-592,361	-452,664	-460,033	-405,440	-459,937	-559,246	-2,665,905	
Service	-2,324,857	-2,393,467	-2,444,407	-4,483,956	-3,953,832	-3,204,321	-4,659,078	

Loss-making corporations (loss = 0)								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	49,914	59,247	52,824	41,398	34,925	38,474	42,663	
Mining	12,806	9,003	12,444	10,923	8,769	10,587	8,479	
Construction	556,089	471,013	418,305	407,970	400,481	387,668	361,890	
Textile	40,215	46,109	36,749	42,014	33,291	30,777	27,398	
Chemical	83,436	64,248	86,741	107,457	68,449	61,049	69,439	
Steel and metals	121,173	109,137	106,617	113,396	102,942	85,178	65,346	
Machinery	194,618	167,918	182,384	243,544	852,243	238,234	156,298	
Food manufacturing	73,994	78,409	85,790	77,941	68,319	66,710	67,379	
Publishing and printing	55,154	70,782	56,732	59,601	50,087	47,482	45,036	
Other manufacturing	120,958	117,487	110,961	129,528	98,118	88,869	90,101	
Wholesale trade	376,481	339,971	338,152	380,890	317,780	285,200	308,523	
Retail trade	308,556	306,967	291,600	313,130	279,770	293,037	322,883	
Restaurants and hotels	158,151	163,782	155,869	159,288	138,591	130,474	96,287	
Finance and insurance	199,141	361,443	1,600,820	169,712	151,979	193,137	200,633	
Real estate	416,515	431,294	412,234	425,033	432,151	364,447	360,709	
Transportation, communications and public utilities	155,236	182,951	196,537	167,970	149,354	147,415	123,474	
Service	812,595	779,272	821,905	926,352	876,219	904,474	879,331	

Profit-making corporations								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	152,357	200,315	246,649	271,263	217,176	208,132	234,199	
Mining	958,635	441,820	406,613	385,050	537,132	599,218	192,860	
Construction	3,420,688	4,082,018	4,617,135	4,995,341	5,193,582	5,435,883	5,433,891	
Textile	258,106	259,314	263,527	281,976	262,768	262,480	209,571	
Chemical	3,225,022	3,552,529	3,650,689	3,879,542	3,727,708	3,739,395	3,644,720	
Steel and metals	1,468,644	1,174,726	1,205,378	1,399,315	1,337,208	1,202,634	994,309	
Machinery	4,917,833	4,209,435	4,030,587	4,881,421	4,710,454	3,665,289	3,568,975	
Food manufacturing	1,074,032	1,295,288	1,418,533	1,509,942	1,409,344	1,327,276	1,301,009	
Publishing and printing	392,088	431,393	444,325	412,113	432,810	571,550	510,668	
Other manufacturing	1,594,711	1,605,874	1,641,281	1,933,085	2,060,133	1,881,188	2,212,009	
Wholesale trade	4,649,284	4,915,723	5,144,536	5,647,072	5,699,053	5,512,986	5,201,803	
Retail trade	3,012,725	3,479,831	3,215,812	3,397,484	3,320,323	3,295,997	3,952,660	
Restaurants and hotels	614,098	755,540	794,481	817,125	815,695	729,681	297,314	
Finance and insurance	9,276,163	9,044,548	8,674,898	8,636,808	9,560,976	6,811,246	8,821,921	
Real estate	2,890,435	3,294,905	3,761,484	4,211,639	4,517,501	4,602,718	4,477,085	
Transportation, communications and public utilities	4,763,478	6,093,623	5,909,888	6,119,067	6,194,614	6,283,531	4,900,676	
Service	8,274,593	8,791,671	9,134,390	9,571,948	11,851,518	10,360,516	11,323,257	

Table 26. Income before Loss Carryforward Deduction by Industry (continued)

Capital with 100 million yen or less (or unknown) unit: million yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	78,957	152,707	180,791	174,833	98,648	75,908	82,494
Mining	29,351	21,992	13,386	48,454	24,100	22,713	38,677
Construction	2,091,113	2,251,038	2,529,762	2,791,693	2,917,673	3,227,215	3,077,149
Textile	70,337	81,090	81,393	108,421	94,112	91,336	-2,370
Chemical	491,687	555,508	621,437	670,458	608,437	619,637	549,370
Steel and metals	546,882	505,083	526,338	739,614	749,822	634,142	406,442
Machinery	996,545	963,973	1,078,517	1,390,593	1,920,717	1,099,668	828,553
Food manufacturing	248,390	323,490	422,530	438,776	381,177	328,980	212,628
Publishing and printing	157,247	187,395	173,941	207,682	184,451	163,992	128,902
Other manufacturing	507,127	495,965	586,909	706,315	700,536	637,957	592,061
Wholesale trade	2,163,567	2,189,941	2,385,493	2,858,035	2,815,794	2,669,238	2,329,343
Retail trade	1,093,141	1,300,612	1,325,535	1,460,145	1,407,975	1,436,541	1,614,352
Restaurants and hotels	163,417	287,329	359,351	347,998	323,353	201,356	-1,081,568
Finance and insurance	1,094,770	1,255,882	2,987,692	1,292,165	2,321,828	717,311	1,155,645
Real estate	1,319,180	1,573,084	1,847,665	2,135,998	2,285,928	2,292,293	2,173,867
Transportation, communications and public utilities	694,322	894,262	954,026	990,186	938,712	899,031	868,251
Service	3,453,037	3,570,789	3,830,927	3,361,929	6,570,811	4,580,097	3,554,235

Capital with over 100 million yen unit: million yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	16,235	23,677	27,621	35,709	21,824	20,169	28,992
Mining	838,300	361,071	335,579	269,838	446,394	529,743	6,455
Construction	1,215,693	1,588,856	1,789,773	1,923,834	1,965,322	1,763,975	1,789,071
Textile	115,313	109,008	97,545	117,736	94,586	96,744	50,558
Chemical	2,336,374	2,444,898	2,733,507	2,974,323	2,916,088	2,754,787	2,780,404
Steel and metals	802,652	526,879	521,685	600,906	506,557	425,173	272,110
Machinery	3,384,608	2,501,170	2,314,878	2,319,437	2,919,128	1,462,639	1,386,133
Food manufacturing	664,774	846,631	890,060	959,653	888,792	832,605	803,532
Publishing and printing	146,054	180,259	196,901	153,089	165,160	317,223	189,015
Other manufacturing	907,618	925,549	867,665	1,064,159	1,178,029	983,390	1,336,596
Wholesale trade	1,637,889	1,984,791	2,133,511	2,420,710	2,397,395	2,224,845	1,843,681
Retail trade	1,340,704	1,629,024	1,334,501	1,346,168	1,319,513	1,225,758	1,258,987
Restaurants and hotels	190,061	252,290	221,233	235,613	221,102	158,349	-285,781
Finance and insurance	6,358,302	7,106,342	6,307,737	6,983,168	6,808,858	5,195,884	7,076,079
Real estate	1,136,814	1,358,757	1,559,870	1,808,626	1,911,927	1,839,822	1,663,252
Transportation, communications and public utilities	3,632,032	4,929,648	4,692,365	4,891,412	4,945,319	4,972,668	1,889,994
Service	3,309,293	3,606,687	3,680,961	2,652,416	2,203,094	3,480,572	3,989,275

Per corporation Total unit: 10 thousand yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	291	520	589	570	315	244	278
Mining	24,783	11,030	10,133	9,462	14,154	17,099	1,441
Construction	816	937	1,039	1,112	1,139	1,151	1,108
Textile	693	727	698	901	770	788	209
Chemical	8,665	9,321	10,544	11,629	11,401	11,020	11,003
Steel and metals	2,704	2,098	2,155	2,791	2,651	2,263	1,471
Machinery	5,705	4,570	4,524	5,010	6,614	3,537	3,108
Food manufacturing	2,178	2,810	3,159	3,380	3,091	2,841	2,506
Publishing and printing	910	1,128	1,165	1,162	1,153	1,624	1,100
Other manufacturing	2,105	2,134	2,201	2,700	2,891	2,517	3,028
Wholesale trade	1,616	1,789	1,949	2,289	2,278	2,148	1,848
Retail trade	756	919	843	900	886	873	956
Restaurants and hotels	300	455	484	483	447	291	-1,098
Finance and insurance	15,376	17,122	19,013	16,845	18,411	11,783	16,257
Real estate	828	965	1,089	1,223	1,262	1,210	1,090
Transportation, communications and public utilities	5,296	6,990	6,645	6,808	6,688	6,533	2,587
Service	943	977	998	780	1,109	987	902

Loss-making corporations (loss < 0) unit: 10 thousand yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	-817	-710		-799	-879	-952	-1,079
Mining	-8,803	-5,228	-5,404	-6,737	-6,211	-5,057	-14,599
Construction	-549	-527	-521	-496	-518	-621	-645
Textile	-996	-1,036	-1,135	-912	-1,024	-989	-1,727
Chemical	-4,094	-5,059	-3,318	-3,139	-2,476	-3,842	-3,239
Steel and metals	-1,571	-1,596	-1,643	-1,185	-1,367	-1,449	-1,919
Machinery	-2,859	-3,598	-3,167	-5,920	-3,235	-5,139	-5,032
Food manufacturing	-1,232	-1,161	-1,135	-1,097	-1,140	-1,267	-1,818
Publishing and printing	-984	-935	-936	-821	-989	-1,055	-1,773
Other manufacturing	-1,162	-1,131	-1,143	-1,161	-1,119	-1,346	-1,374
Wholesale trade	-1,369	-1,198	-1,099	-895	-962	-1,047	-1,516
Retail trade	-608	-605	-613	-670	-644	-702	-1,132
Restaurants and hotels	-762	-710	-687	-719	-720	-872	-2,399
Finance and insurance	-10,508	-5,538	-4,849	-2,614	-2,779	-5,280	-4,134
Real estate	-799	-732	-703	-630	-668	-728	-880
Transportation, communications and public utilities	-2,150	-1,762	-1,722	-1,421	-1,512	-1,721	-6,880
Service	-798	-802	-809	-1,476	-1,248	-978	-1,393

Table 26. Income before Loss Carryforward Deduction by Industry (continued)

Loss-making corporations (loss = 0) unit: 10 thousand yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	618	695	637	533	478	501	503
Mining	1,244	1,001	1,422	1,211	1,095	1,290	1,064
Construction	433	426	397	392	388	383	379
Textile	442	549	449	547	456	454	428
Chemical	881	739	1,002	1,261	861	791	965
Steel and metals	695	699	746	804	766	752	682
Machinery	780	731	873	1,172	4,285	1,387	1,014
Food manufacturing	621	637	696	669	622	613	656
Publishing and printing	486	663	550	599	528	521	523
Other manufacturing	544	581	563	675	531	510	543
Wholesale trade	590	569	571	640	560	529	577
Retail trade	332	339	328	356	329	348	377
Restaurants and hotels	432	454	444	462	416	385	343
Finance and insurance	1,794	3,365	16,303	1,666	1,506	1,835	1,792
Real estate	556	592	556	563	568	477	452
Transportation, communications and public utilities	664	789	902	806	733	733	686
Service	450	437	457	503	480	489	465
Profit-making corporations unit: 10 thousand yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	1,318	1,466	1,586	1,653	1,362	1,309	1,432
Mining	74,140	34,571	31,966	29,416	41,034	46,961	15,246
Construction	2,212	2,488	2,671	2,754	2,757	2,740	2,721
Textile	4,039	3,919	3,908	4,210	3,913	4,069	3,631
Chemical	28,215	31,399	31,371	32,549	31,088	31,650	32,542
Steel and metals	8,553	6,599	6,592	7,214	6,518	6,102	5,955
Machinery	18,732	15,309	14,275	16,618	15,224	12,571	13,817
Food manufacturing	9,790	10,995	11,503	12,133	11,859	11,381	11,926
Publishing and printing	5,338	5,735	5,843	5,438	5,885	7,669	7,431
Other manufacturing	8,359	8,151	8,065	9,109	9,572	8,918	11,104
Wholesale trade	5,667	5,903	6,061	6,453	6,441	6,292	6,185
Retail trade	3,632	4,018	3,633	3,819	3,791	3,705	4,343
Restaurants and hotels	2,334	2,605	2,564	2,579	2,573	2,257	1,292
Finance and insurance	51,173	46,982	46,004	46,385	51,553	35,873	43,426
Real estate	2,509	2,690	2,900	3,070	3,137	3,058	2,823
Transportation, communications and public utilities	15,494	17,689	16,197	16,528	16,655	16,854	14,251
Service	3,380	3,410	3,379	3,383	4,065	3,410	3,613
Capital with 100 million yen or less (or unknown) unit: 10 thousand yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	243	455	515	477	260	194	207
Mining	867	653	400	1,478	742	718	1,258
Construction	517	550	610	660	682	746	702
Textile	264	312	320	434	386	385	-10
Chemical	1,569	1,796	2,031	2,222	2,044	2,101	1,883
Steel and metals	1,111	1,040	1,096	1,558	1,600	1,370	891
Machinery	1,329	1,300	1,469	1,918	2,681	1,550	1,186
Food manufacturing	602	789	1,032	1,075	940	815	530
Publishing and printing	476	580	550	674	612	557	449
Other manufacturing	762	752	896	1,086	1,087	998	937
Wholesale trade	931	950	1,041	1,253	1,244	1,183	1,042
Retail trade	341	409	422	470	459	473	539
Restaurants and hotels	139	243	301	289	266	163	-871
Finance and insurance	2,448	2,782	6,603	2,840	5,049	1,539	2,455
Real estate	447	520	593	665	690	674	620
Transportation, communications and public utilities	870	1,097	1,147	1,170	1,088	1,019	523
Service	486	490	513	439	836	565	427
Capital with over 100 million yen unit: 10 thousand yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	5,138	7,662	8,578	11,300	7,155	6,837	9,929
Mining	735,350	347,184	349,562	313,765	587,360	802,641	11,129
Construction	134,927	184,108	217,205	236,634	247,210	232,102	245,751
Textile	70,744	71,247	65,030	84,702	72,758	78,653	44,350
Chemical	179,583	194,039	223,508	255,307	255,126	245,088	256,258
Steel and metals	122,169	84,707	87,974	105,607	95,218	83,367	55,195
Machinery	189,296	148,437	144,139	150,028	191,922	98,827	97,822
Food manufacturing	101,647	134,173	151,114	172,290	163,682	165,199	169,165
Publishing and printing	52,538	70,140	82,385	68,343	82,580	166,959	104,428
Other manufacturing	138,568	150,251	148,573	189,352	215,362	184,848	258,030
Wholesale trade	57,978	73,375	82,058	96,520	99,642	96,564	82,528
Retail trade	104,906	129,906	113,189	119,341	125,788	123,192	134,220
Restaurants and hotels	42,049	60,501	56,437	64,200	66,597	51,579	-111,199
Finance and insurance	169,329	192,636	173,194	192,692	188,716	145,911	198,543
Real estate	72,919	90,584	108,550	129,003	144,953	143,400	134,241
Transportation, communications and public utilities	194,956	271,158	263,468	279,989	290,218	299,378	118,125
Service	58,811	65,362	68,078	50,169	42,663	67,336	79,483

Source: Authors' calculation

solely on the information in Appended Table 1(1) of the corporate tax return, the finance and insurance industry had the highest total amount during this period, with the service industry being the most prevalent in FY2019 (see Table 26, first Table). In all years except FY2019, the service industry was the second most prevalent industry after finance and insurance. The third most prevalent industry was machinery manufacturing in FY2014, transportation, communications and public utilities from FY2015 to 2019, and construction in FY2020. Due to the COVID-19 pandemic, the restaurant and hotel industry had a negative income before loss carryforward deduction in FY2020, as a sum of profit-making and loss-making corporations.

As in Section V, the second through fourth Tables in Table 26 also show the total amount of income before loss carryforward deduction for corporations with positive (and therefore profit-making) income after loss carryforward deduction, zero, and negative (losses greater than zero after loss carryforward deduction). The values in the first Table of Table 26 are calculated by offsetting the income before loss carryforward deduction from corporations with profit-making and loss-making corporations with zero income after loss carryforward deduction, with the losses before loss carryforward deduction from loss-making corporations with losses greater than zero. This is the same as Table 3.

As explained in Section V, the loss amount before loss carryforward deduction of a loss-making corporation whose loss amount after loss carryforward deduction is greater than zero is the loss amount after loss carryforward deduction in the second Table of Table 26. In the third Table of Table 26, the income after loss carryforward deduction of a loss-making corporation whose income after loss carryforward deduction is zero is the current loss carryforward deduction.

Looking at the total amount of income before loss carryforward deductions by industry for profit-making corporations in the fourth Table of Table 26, the largest industry was finance and insurance up until FY2015, but has changed to services since FY2016. The next largest industry was services up until FY2015, but has changed to finance and insurance since FY2016. The third largest industry was machinery manufacturing in FY2014, transportation, communications and public utilities from FY2015 to FY2019, and construction in FY2020. This differs from the first Table of Table 26, due to the loss amount before loss carryforward deductions for loss-making corporations whose loss amount after loss carryforward deductions exceeds zero in the second Table of Table 26. The larger this loss amount, the smaller the amount in the first Table of Table 26 will be. When looking at the restaurant and hotel industry in FY2020 by capital size, the total income before loss carryforward deductions for corporations with capital of 100 million yen or less was significantly more negative than the total for corporations with capital of more than 100 million yen, which is thought to have influenced the situation described above.

The fifth and sixth Tables in Table 26 show income before loss carryforward deduction (offsetting losses before loss carryforward deduction) by capital size. For each industry, the former shows the total amount for corporations with capital of 100 million yen or less, and the latter shows the total amount for corporations with capital of over 100 million yen. Looking at these, in every fiscal year, the total amount generated by corporations with capi-

tal of 100 million yen or less accounted for the majority in agriculture, forestry and fisheries, construction, wholesale trade, and real estate, while the total amount generated by corporations with capital of over 100 million yen accounted for the majority in textile, chemical, machinery, food manufacturing, other manufacturing, finance and insurance, and transportation, communications, and public utilities.

These figures are shown on a per-corporation basis in the seventh and subsequent Tables in Table 26. In the mining, chemical, and finance and insurance industries, there were years in which income before loss carryforward deduction per corporation exceeded 100 million yen, a higher figure than in other industries. In the restaurant and hotel industry in FY2020, the total income before loss carryforward deduction, summing profit-making and loss-making corporations, was negative. While this figure is not significant per corporation compared to other industries, the loss before loss carryforward deduction per corporation in the restaurant and hotel industry in FY2020 for loss-making corporations with losses exceeding zero after loss carryforward deduction was nearly three times higher than in other years, which is thought to have influenced the situation described above.

Table 27 shows income after loss carryforward deduction by industry. As in Section V, this section does not report the results of loss-making corporations. The first Table in Table 27 shows that the industry with the highest total income during this period was the finance and insurance industry except FY2019, with the service industry having the highest total in-

Table 27. Income by Industry

All corporations		unit: million yen					
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	29,576	97,662	134,911	151,411	73,690	45,632	54,103
Mining	847,028	368,558	324,064	300,014	407,561	518,082	23,897
Construction	2,464,494	3,112,148	3,660,839	4,086,717	4,302,486	4,418,482	4,326,389
Textile	111,825	119,954	121,972	160,391	144,161	145,209	9,663
Chemical	2,497,569	2,765,612	3,100,386	3,390,108	3,337,631	3,220,279	3,114,454
Steel and metals	919,425	797,437	857,387	1,123,930	1,081,863	906,521	568,763
Machinery	3,780,896	3,073,481	3,004,518	3,244,137	3,803,878	2,217,965	1,878,666
Food manufacturing	788,941	994,085	1,169,948	1,259,396	1,170,989	1,062,146	909,420
Publishing and printing	195,653	253,183	278,567	268,492	274,455	391,152	244,465
Other manufacturing	1,237,400	1,250,880	1,283,196	1,543,604	1,736,109	1,484,117	1,781,986
Wholesale trade	3,163,312	3,546,122	3,837,219	4,599,859	4,704,613	4,467,392	3,702,477
Retail trade	1,989,707	2,393,171	2,250,536	2,358,499	2,336,768	2,252,532	2,412,709
Restaurants and hotels	122,503	295,907	365,495	359,921	347,085	174,809	-1,485,952
Finance and insurance	6,364,221	7,623,572	7,288,971	7,759,435	8,743,708	5,597,343	7,757,272
Real estate	1,851,678	2,276,604	2,782,206	3,334,456	3,562,834	3,597,465	3,323,805
Transportation, communications and public utilities	3,770,408	5,079,019	5,128,820	5,532,232	5,554,928	5,611,719	2,149,967
Service	5,481,443	6,004,824	6,187,189	4,704,561	6,525,925	6,784,984	5,768,815

Profit-making corporations		unit: million yen					
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	136,656	180,841	225,973	253,531	205,319	196,161	219,480
Mining	950,818	436,319	394,157	377,695	482,969	575,432	180,105
Construction	3,134,464	3,825,285	4,376,743	4,774,500	5,013,554	5,250,844	5,255,950
Textile	224,495	235,280	243,309	258,224	251,523	250,387	198,444
Chemical	2,977,967	3,381,983	3,482,872	3,732,325	3,609,262	3,646,300	3,498,840
Steel and metals	1,159,709	1,049,337	1,121,358	1,296,120	1,265,633	1,135,018	949,866
Machinery	4,512,194	3,985,691	3,824,094	4,659,072	4,526,730	3,559,180	3,389,254
Food manufacturing	1,023,803	1,197,660	1,361,681	1,448,850	1,378,684	1,294,547	1,261,648
Publishing and printing	339,593	387,703	408,782	379,435	407,742	528,969	482,252
Other manufacturing	1,538,324	1,552,727	1,580,864	1,835,743	2,015,795	1,832,827	2,155,439
Wholesale trade	4,387,620	4,627,083	4,800,903	5,349,075	5,508,256	5,371,496	5,039,779
Retail trade	2,877,143	3,250,334	3,097,912	3,262,798	3,209,373	3,179,267	3,814,913
Restaurants and hotels	541,275	675,611	735,261	752,723	756,916	675,260	274,997
Finance and insurance	8,386,453	8,667,340	8,269,260	8,290,622	9,325,978	6,688,531	8,548,103
Real estate	2,702,634	3,070,963	3,548,389	4,026,503	4,314,631	4,432,515	4,324,481
Transportation, communications and public utilities	4,362,769	5,531,683	5,588,853	5,937,671	6,014,865	6,170,965	4,815,872
Service	7,806,300	8,398,291	8,631,596	9,188,516	10,479,757	9,989,305	10,427,893

Table 27. Income by Industry (continued)

Capital with 100 million yen or less (or unknown)							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	15,728	76,001	109,292	117,057	52,675	26,540	26,280
Mining	13,635	9,991	-2,631	34,597	12,216	8,303	27,754
Construction	1,368,294	1,621,380	1,959,204	2,239,172	2,375,221	2,681,368	2,559,022
Textile	18,416	25,983	34,211	53,795	53,508	53,167	-38,276
Chemical	382,226	458,554	505,607	531,690	513,873	532,643	455,010
Steel and metals	388,268	360,273	383,602	583,433	613,668	517,122	320,005
Machinery	722,685	736,366	834,935	1,071,480	1,172,253	904,963	614,300
Food manufacturing	159,291	217,438	307,055	331,617	289,804	240,618	123,385
Publishing and printing	85,758	95,889	104,402	135,666	119,739	104,616	69,998
Other manufacturing	355,849	349,239	437,974	527,265	571,552	516,827	469,467
Wholesale trade	1,672,396	1,723,306	1,936,482	2,351,018	2,365,830	2,283,842	1,912,897
Retail trade	694,170	896,519	943,521	1,057,031	1,046,073	1,066,424	1,184,568
Restaurants and hotels	-31,058	74,284	157,111	139,096	139,216	25,038	-1,198,520
Finance and insurance	949,193	944,518	1,378,164	1,147,868	2,161,243	567,453	956,089
Real estate	781,288	1,005,314	1,310,409	1,570,836	1,697,706	1,797,149	1,681,167
Transportation, communications and public utilities	480,253	643,356	727,243	771,063	736,889	694,850	291,236
Service	2,356,711	2,535,045	2,737,148	2,153,689	4,456,989	3,383,527	2,390,558

Capital with over 100 million yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	13,848	21,661	25,620	34,355	21,015	19,091	27,823
Mining	833,393	358,568	326,695	265,417	395,346	509,779	-3,857
Construction	1,096,200	1,490,769	1,701,634	1,847,545	1,927,265	1,737,114	1,767,366
Textile	93,409	93,971	87,761	106,596	90,653	92,042	47,939
Chemical	2,115,343	2,307,057	2,594,779	2,858,418	2,823,758	2,687,636	2,659,444
Steel and metals	531,157	437,163	473,784	540,496	468,196	389,398	248,759
Machinery	3,058,212	2,337,115	2,169,583	2,172,658	2,631,625	1,313,002	1,264,366
Food manufacturing	629,649	776,646	862,893	927,779	881,185	821,528	786,034
Publishing and printing	109,895	157,294	174,165	132,826	154,716	286,536	174,467
Other manufacturing	881,551	901,641	845,222	1,016,339	1,164,557	967,290	1,312,519
Wholesale trade	1,490,916	1,822,816	1,900,737	2,248,841	2,338,783	2,183,550	1,789,580
Retail trade	1,295,537	1,496,652	1,307,015	1,301,468	1,290,695	1,186,108	1,228,141
Restaurants and hotels	153,560	221,623	208,384	220,826	207,869	149,771	-287,432
Finance and insurance	5,415,028	6,679,055	5,910,807	6,611,567	6,582,465	5,029,890	6,801,183
Real estate	1,070,390	1,271,290	1,471,797	1,763,620	1,865,128	1,800,316	1,642,638
Transportation, communications and public utilities	3,290,155	4,435,663	4,401,577	4,761,169	4,818,039	4,916,869	1,858,731
Service	3,124,732	3,469,779	3,450,042	2,550,871	2,068,935	3,401,457	3,378,257

Per corporation							
Total	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	90	288	381	410	193	116	135
Mining	24,194	10,612	9,410	8,918	12,261	16,035	763
Construction	608	759	881	964	1,003	1,019	985
Textile	417	459	476	639	589	608	42
Chemical	7,652	8,591	9,744	10,816	10,797	10,517	10,291
Steel and metals	1,843	1,621	1,763	2,340	2,283	1,937	1,233
Machinery	4,924	4,054	4,005	4,381	5,198	3,062	2,636
Food manufacturing	1,881	2,388	2,816	3,044	2,850	2,598	2,242
Publishing and printing	587	777	875	865	905	1,320	846
Other manufacturing	1,841	1,878	1,941	2,354	2,672	2,304	2,798
Wholesale trade	1,344	1,520	1,655	1,994	2,056	1,961	1,640
Retail trade	618	750	713	756	759	739	803
Restaurants and hotels	104	250	305	298	285	141	-1,194
Finance and insurance	13,130	15,610	14,909	15,795	17,631	11,154	15,320
Real estate	624	749	889	1,033	1,071	1,053	944
Transportation, communications and public utilities	4,616	6,096	6,036	6,403	6,313	6,244	2,359
Service	765	818	822	610	825	831	689

Profit-making corporations							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	1,183	1,324	1,453	1,545	1,288	1,234	1,342
Mining	73,536	34,141	30,987	28,854	36,896	45,097	14,238
Construction	2,027	2,331	2,532	2,632	2,662	2,647	2,632
Textile	3,513	3,556	3,608	3,856	3,745	3,881	3,438
Chemical	26,054	29,892	29,929	31,314	30,100	30,862	31,240
Steel and metals	6,753	5,895	6,133	6,682	6,169	5,759	5,689
Machinery	17,187	14,496	13,543	15,861	14,631	12,207	13,121
Food manufacturing	9,332	10,166	11,042	11,642	11,601	11,101	11,565
Publishing and printing	4,623	5,154	5,375	5,007	5,544	7,097	7,018
Other manufacturing	8,063	7,881	7,768	8,650	9,366	8,688	10,820
Wholesale trade	5,348	5,556	5,656	6,113	6,225	6,131	5,992
Retail trade	3,468	3,753	3,500	3,667	3,665	3,574	4,192
Restaurants and hotels	2,057	2,329	2,373	2,376	2,388	2,089	1,195
Finance and insurance	46,265	45,023	43,852	44,525	50,286	35,227	42,078
Real estate	2,346	2,507	2,736	2,935	2,996	2,945	2,726
Transportation, communications and public utilities	14,190	16,058	15,317	16,038	16,172	16,552	14,004
Service	3,188	3,257	3,193	3,248	3,594	3,288	3,327

Table 27. Income by Industry (continued)

Capital with 100 million yen or less (or unknown)							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	48	226	311	319	139	68	66
Mining	403	297	-79	1,055	376	262	903
Construction	338	396	472	529	555	619	583
Textile	69	100	134	216	220	224	-166
Chemical	1,220	1,483	1,653	1,762	1,726	1,806	1,559
Steel and metals	788	742	799	1,229	1,309	1,117	701
Machinery	964	993	1,137	1,478	1,636	1,275	880
Food manufacturing	386	530	750	812	715	596	308
Publishing and printing	259	297	330	440	398	355	244
Other manufacturing	535	529	669	811	887	809	743
Wholesale trade	719	747	845	1,030	1,045	1,013	856
Retail trade	217	282	300	340	341	351	395
Restaurants and hotels	-26	63	131	115	114	20	-965
Finance and insurance	2,123	2,092	3,046	2,523	4,700	1,217	2,031
Real estate	265	332	421	489	513	528	479
Transportation, communications and public utilities	602	789	874	911	854	788	325
Service	331	348	366	281	567	417	287

Capital with over 100 million yen							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	4,382	7,010	7,956	10,872	6,890	6,472	9,528
Mining	731,046	344,777	340,307	308,624	520,192	772,393	-6,650
Construction	121,665	172,743	206,509	227,250	242,423	228,568	242,770
Textile	57,306	61,419	58,507	76,688	69,733	74,831	42,052
Chemical	162,594	183,100	212,165	245,358	247,048	239,114	245,110
Steel and metals	80,846	70,284	79,896	94,991	88,007	76,353	50,458
Machinery	171,041	138,701	135,092	140,534	173,019	88,716	89,228
Food manufacturing	96,277	123,082	146,501	166,567	162,281	163,002	165,481
Publishing and printing	39,530	61,204	72,873	59,297	77,358	150,808	96,390
Other manufacturing	134,588	146,370	144,730	180,843	212,899	181,821	253,382
Wholesale trade	52,776	67,387	73,105	89,667	97,206	94,772	80,107
Retail trade	101,372	119,350	110,858	115,378	123,040	119,207	130,932
Restaurants and hotels	33,974	53,147	53,159	60,170	62,611	48,785	-111,841
Finance and insurance	144,208	181,053	162,296	182,438	182,441	141,249	190,830
Real estate	68,659	84,753	102,421	125,793	141,405	140,321	132,578
Transportation, communications and public utilities	176,605	243,986	247,141	272,534	282,749	296,019	116,171
Service	55,531	62,881	63,807	48,248	40,065	65,805	67,309

Source: Authors' calculation

come in FY2019. The second-highest industry was the service industry through FY2016, 2018, and 2020, and the transportation, communications and public utilities industry in FY2017 and 2019. The third-highest industry was the machinery industry in FY2014, the transportation, communications and public utilities industry in FY2015, 2016, and 2018, the service industry in FY2017, the finance and insurance industry in FY2019, and the construction industry in FY2020. The restaurant and hotel industry recorded a negative income after loss carryforward deduction in FY2020 due to the COVID-19 pandemic. Looking at the second Table in Table 27, which shows the total income amount for only profit-making corporations, the food and beverage industry in 2020 was naturally positive.

As in Table 26, the third and fourth Tables of Table 27 show the total amount of income after loss carryforward deduction by capital size for each industry. For each industry, the former shows the total amount for corporations with capital of 100 million yen or less, and the latter shows the total amount for corporations with capital of over 100 million yen. Looking at these figures, the only industry in which corporations with capital of 100 million yen or less accounted for the majority of total income in every fiscal year was the construction industry (for agriculture, forestry, and fisheries, the total amount recorded by corporations with capital of 100 million yen or less exceeded the majority except for FY2020, and for wholesale, the total amount recorded by corporations with capital of 100 million yen or

less exceeded the majority except for FY2015). The industries in which corporations with capital of over 100 million yen accounted for the majority of total income were the textile industry, chemical industry, machinery industry, food manufacturing, other manufacturing, retail trade, finance and insurance, and transportation, communications and public utilities (for mining and real estate, the total amount recorded by corporations with capital of over 100 million yen exceeded the majority except for FY2020, for publishing and printing, the total amount recorded by corporations with capital of over 100 million yen exceeded the majority except for FY2017, and for services, the total amount recorded by corporations with capital of over 100 million yen exceeded the majority except for FY2018). Compared with the fifth and sixth Tables of Table 26, for corporations with capital of over 100 million yen, there is a limit on loss carryforward deductions, so income after loss carryforward deductions is higher.

The fifth and subsequent Tables in Table 27 also show the income amount per corporation for each industry. Looking at the amount by capital and by industry, for corporations with capital of 100 million yen or less, the income amount per corporation was negative in the food and beverage inns industry in FY2014 and 2020, the mining industry in FY2016, and the textile industry in FY2020. Even for corporations with capital of over 100 million yen, the income amount per corporation was negative in the mining industry and the food and beverage inns industry in FY2020. Of course, corporations that recorded profits in the relevant industry for the current fiscal year had positive income amounts, but this amount was negative because the total amount of losses after loss carryforward deduction of corporations in the same industry that were in the red exceeded this amount.

VI-3. Loss Carryforwards

The difference between income before and after loss carryforward deduction is the loss carryforwards. In this paper, the current deduction amount for loss carryforward or disaster losses and the amount carried forward to the next period are available. In Appended Table 4 of the corporate tax return, the current deduction amount for loss carryforward or disaster losses, etc. calculated on Appended Table 7 is applied immediately before calculating income. Although Appended Table 4 of the corporate tax return is not available in this study, the current deduction amount for loss carryforward or disaster losses, etc., written in Appended Table 4 is transferred to Appended Table 1, so the current deduction amounts for loss carryforward or disaster losses, etc., are available. The carryforward amounts for losses or disaster losses to the next period are also available because they are transferred to Appended Table 1.

We looked at the data by income bracket, capital bracket, and industry. Here, we examine how loss carryforwards fluctuated over the analyzed data. Table 28 compares the current-year deduction amount of loss carryforwards for all corporations by industry over the years. Table 28 shows that the total current-year deduction amount for all corporations increased from approximately 7.6 trillion yen in FY2014 to FY2016, 2018 and 2020 com-

Table 28. Loss Carryforward Deduction by Industry

All corporations								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	65,615	78,721	73,501	59,130	46,782	50,444	57,383	
Mining	20,623	14,504	24,901	18,278	62,932	34,374	21,234	
Construction	842,312	727,746	658,697	628,810	580,510	572,707	539,831	
Textile	73,825	70,144	56,966	65,766	44,536	42,871	38,525	
Chemical	330,491	234,794	254,558	254,673	186,895	154,144	215,320	
Steel and metals	430,109	234,526	190,636	216,591	174,516	152,794	109,789	
Machinery	600,256	391,662	388,877	465,893	1,035,967	344,342	336,019	
Food manufacturing	124,223	176,036	142,642	139,033	98,980	99,439	106,740	
Publishing and printing	107,649	114,471	92,275	92,279	75,156	90,063	73,452	
Other manufacturing	177,346	170,634	171,378	226,870	142,456	137,230	146,671	
Wholesale trade	638,145	628,611	681,785	678,887	508,577	426,690	470,547	
Retail trade	444,138	536,464	409,499	447,815	390,720	409,767	460,630	
Restaurants and hotels	230,975	243,711	215,089	223,690	197,370	184,896	118,603	
Finance and insurance	1,088,851	738,651	2,006,458	515,898	386,978	315,851	474,451	
Real estate	604,317	655,237	625,329	610,169	635,021	534,650	513,314	
Transportation, communications and public utilities	555,946	744,891	517,572	349,366	329,102	259,980	208,278	
Service	1,280,888	1,172,652	1,324,699	1,309,784	2,247,980	1,275,685	1,774,695	
Total	7,615,708	6,933,455	7,834,861	6,302,931	7,144,479	5,085,928	5,665,482	

Loss-making corporations (loss = 0)								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Total	3,735,033	3,759,034	4,966,662	3,776,146	4,063,469	3,373,212	3,225,870	

Profit-making corporations								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	15,702	19,474	20,677	17,732	11,857	11,971	14,720	
Mining	7,817	5,501	12,457	7,355	54,163	23,786	12,755	
Construction	286,224	256,733	240,392	220,841	180,029	185,039	177,941	
Textile	33,610	24,035	20,217	23,752	11,245	12,094	11,127	
Chemical	247,055	170,546	167,817	147,217	118,445	93,095	145,880	
Steel and metals	308,935	125,388	84,020	103,195	71,574	67,615	44,443	
Machinery	405,639	223,744	206,493	222,349	183,724	106,109	179,722	
Food manufacturing	50,229	97,627	56,852	61,092	30,661	32,729	39,361	
Publishing and printing	52,495	43,689	35,543	32,678	25,069	42,581	28,415	
Other manufacturing	56,388	53,147	60,417	97,342	44,338	48,361	56,570	
Wholesale trade	261,664	288,640	343,634	297,996	190,797	141,490	162,025	
Retail trade	135,582	229,497	117,900	134,685	110,951	116,730	137,747	
Restaurants and hotels	72,824	79,928	59,220	64,402	58,779	54,422	22,316	
Finance and insurance	889,710	377,208	405,638	346,186	234,999	122,715	273,818	
Real estate	187,801	223,943	213,095	185,136	202,870	170,203	152,604	
Transportation, communications and public utilities	400,709	561,940	321,035	181,395	179,748	112,565	84,804	
Service	468,293	393,380	502,794	383,432	1,371,761	371,211	895,364	
Total	3,880,676	3,174,421	2,868,199	2,526,785	3,081,009	1,712,716	2,439,612	

Capital with 100 million yen or less (or unknown)								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	63,229	76,705	71,499	57,776	45,973	49,367	56,213	
Mining	15,716	12,001	16,017	13,857	11,884	14,410	10,922	
Construction	722,820	629,658	570,558	552,521	542,452	545,847	518,127	
Textile	51,921	55,106	47,182	54,626	40,603	38,169	35,906	
Chemical	109,461	96,954	115,830	138,768	94,565	86,993	94,360	
Steel and metals	158,614	144,810	142,736	156,181	136,154	117,019	86,438	
Machinery	273,860	227,607	243,582	319,113	748,464	194,705	214,252	
Food manufacturing	89,099	106,052	115,475	107,159	91,373	88,362	89,243	
Publishing and printing	71,489	91,507	69,540	72,016	64,712	59,376	58,903	
Other manufacturing	151,278	146,726	148,936	179,050	128,984	121,131	122,594	
Wholesale trade	491,171	466,635	449,011	507,017	449,964	385,396	416,447	
Retail trade	398,971	404,093	382,014	403,114	361,902	370,117	429,784	
Restaurants and hotels	194,475	213,044	202,240	208,903	184,137	176,318	116,952	
Finance and insurance	145,576	311,364	1,609,528	144,298	160,585	149,858	199,556	
Real estate	537,892	567,770	537,255	565,162	588,223	495,144	492,701	
Transportation, communications and public utilities	214,069	250,906	226,783	219,123	201,823	204,181	177,015	
Service	1,096,327	1,035,744	1,093,780	1,208,239	2,113,822	1,196,570	1,163,676	
Total	4,785,967	4,836,682	6,041,966	4,906,926	5,965,620	4,292,961	4,283,088	

Table 28. Loss Carryforward Deduction by Industry (continued)

	Capital with over 100 million yen							unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	2,386	2,016	2,002	1,354	809	1,077	1,169	
Mining	4,907	2,503	8,884	4,421	51,048	19,964	10,312	
Construction	119,492	98,088	88,139	76,289	38,058	26,860	21,704	
Textile	21,904	15,037	9,784	11,140	3,933	4,702	2,619	
Chemical	221,030	137,840	138,728	115,905	92,330	67,151	120,960	
Steel and metals	271,495	89,716	47,900	60,410	38,362	35,774	23,352	
Machinery	326,396	164,056	145,295	146,779	287,503	149,637	121,767	
Food manufacturing	35,125	69,984	27,167	31,873	7,607	11,078	17,497	
Publishing and printing	36,160	22,965	22,736	20,263	10,444	30,687	14,549	
Other manufacturing	26,068	23,908	22,443	47,820	13,472	16,100	24,077	
Wholesale trade	146,974	161,975	232,774	171,870	58,612	41,295	54,101	
Retail trade	45,167	132,372	27,485	44,701	28,818	39,650	30,846	
Restaurants and hotels	36,500	30,667	12,849	14,787	13,233	8,578	1,651	
Finance and insurance	943,275	427,287	396,930	371,601	226,393	165,994	274,895	
Real estate	66,424	87,467	88,073	45,006	46,798	39,506	20,613	
Transportation, communications and public utilities	341,877	493,985	290,788	130,243	127,279	55,799	31,263	
Service	184,561	136,908	230,919	101,544	134,158	79,115	611,018	
Total	2,829,741	2,096,773	1,792,896	1,396,005	1,178,858	792,967	1,382,394	

Source: Authors' calculation

pared to the previous year, before decreasing in FY2015, 2017 and 2019. By industry, the service industry had the largest amount every year, never falling below 1 trillion yen.

The second and third Tables of Table 28 show the total amount of loss carryforward deductions for the current period, broken down by industry into loss-making and profit-making corporations. As mentioned above, the current period loss carryforward deduction amount for loss-making corporations with negative income after loss carryforward deductions is zero. Also, the total amount of loss carryforward deductions for loss-making corporations with zero income after loss carryforward deductions is the same as the third Table of Table 26, so we will not report it here.

First, looking at the total for all corporations, with the exception of FY2014, the total amount of current deductions applied by loss-making corporations (whose income after loss carryforward deductions is zero) was greater than the total amount of current deductions applied by profit-making corporations. By industry, the only industry in which loss-making corporations applied more current deductions than profit-making corporations was the chemical industry. Industries in which loss-making corporations applied more current deductions than profit-making corporations were agriculture, forestry, and fisheries, construction, textiles, publishing and printing, other manufacturing, retail, restaurant and hotel, and real estate. However, the figures were particularly high in the finance and insurance industry in FY2016 and the machinery and services industries in FY2018. A sudden increase in the amount of current deductions for loss-making corporations may occur when a previously loss-making corporation becomes profit-making due to a large amount of income in the cur-

¹³ Theoretically, there may be corporations that were loss-making corporations with large amounts of loss carried forward until the previous fiscal year, but became profit-making corporations in the current fiscal year, and therefore, although the loss was not recorded in the loss carried forward of the profit-making corporation in the previous fiscal year, it will be recorded in the current fiscal year's deduction amount. As will be discussed later, such corporations may increase the loss carried forward of profit-making corporations.

rent fiscal year, suddenly allowing it to use a larger amount of loss carryforward deductions. The smaller the loss carryforward or the smaller the amount of income, the smaller the current deductions.

The fourth and fifth Tables in Table 28 show the total amount of loss carryforward deductions for each industry by capital size. The former shows the total amount for corporations with capital of 100 million yen or less, while the latter shows the total amount for corporations with capital of over 100 million yen. These Tables suggest that in each fiscal year, the total amount of loss carryforward deductions claimed by corporations with capital of 100 million yen or less accounted for the majority of the total. The total amount of loss carryforward deductions claimed by corporations with capital of over 100 million yen decreased from FY2014 to FY2019, partly because of the reduction in the deduction limit in this period, as shown in Table 5. In FY2020, the total amount increased due to the increase in corporations that became loss-making corporations due to the COVID-19 pandemic. This is likely due to the decrease in income in FY2020, which led to an increase in carryforward losses that could not be fully deducted due to the loss carryforward deduction limit being reached, resulting in an increase in the amount carried forward to the next fiscal year.¹³ The total amount for corporations with capital of 100 million yen or less actually decreased in FY2020. These Tables allow for a more detailed analysis of the disproportionately high current-period deduction amounts for the finance and insurance industry in FY2016, and the machinery and services industries in FY2018. The disproportionately high current-period deduction amounts for the finance and insurance industry in FY2016 were attributed to loss-making corporations with capital of 100 million yen or less, which resulted in zero income after loss carryforward deductions. In the case of the services industry in FY2018, it was attributed to loss-making corporations with capital of 100 million yen or less, which would result in zero income after loss carryforward deductions. The disproportionately high current-period deduction amounts for the machinery industry in FY2018 were attributed to loss-making corporations with capital of over 100 million yen and those with capital of 100 million yen or less, which would result in zero income after loss carryforward deductions.

Table 29 compares the amount of losses carried forward to the next fiscal year (loss carryforward amount) for all corporations by industry over the years. Table 29 shows that the total amount carried forward to the next fiscal year for all corporations decreased from approximately 58 trillion yen in FY2014 to FY2015, increased in FY2016, and then showed a downward trend until FY2019, before increasing to approximately 59 trillion yen in FY2020. The decrease in losses carried forward can be seen by looking at the amount of deduction for the current fiscal year in Table 28, but the increase cannot be seen without looking at the year-on-year comparison in Table 29.

Looking at the total amount of losses carried forward by industry, we can see that in most years, the construction, machinery, wholesale, retail, finance and insurance, and services industries had the largest amounts. In FY2020, industries other than the chemical industry and other manufacturing industries showed an increase compared to FY2019, but until FY2019, only agriculture, forestry, and fisheries showed continuous increases since

FY2014, while construction, textiles, and real estate showed continuous decreases. The steel and metals industry showed a particularly high increase in FY2016.

The second through fourth Tables in Table 28 show the total amount of carryforward losses by industry for corporations with positive, zero, or negative income after loss carryforward deductions. Note that these total amounts are categorized by whether the corporation is loss-making or profit-making in the current fiscal year. Loss carryforward (stock basis) carried by corporations that were loss-making in the previous fiscal year but are profit-making in the current fiscal year is included in the total amount of profit-making cor-

Table 29. Loss Carryforward to the Next Year by Industry

All corporations							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	478,568	487,132	498,482	521,878	555,724	585,198	629,651
Mining	260,468	307,581	346,867	364,887	403,429	340,322	384,123
Construction	4,112,778	3,880,822	3,711,188	3,414,100	3,212,651	3,120,100	3,196,846
Textile	727,884	675,076	672,850	624,277	582,078	570,225	655,960
Chemical	1,902,551	2,097,803	2,168,621	1,722,403	1,626,173	1,840,606	1,707,658
Steel and metals	1,947,705	1,696,643	6,517,100	1,647,088	1,356,026	1,171,884	1,307,973
Machinery	5,122,894	5,336,693	5,420,704	6,105,665	4,787,227	4,775,277	5,797,432
Food manufacturing	1,152,634	1,144,236	1,136,414	1,093,412	1,046,485	1,084,828	1,222,490
Publishing and printing	850,537	845,791	871,861	799,968	775,742	757,757	830,582
Other manufacturing	1,512,951	1,615,950	1,714,846	1,605,438	1,522,860	1,559,064	1,558,614
Wholesale trade	5,359,592	5,506,334	5,542,186	4,704,665	4,418,615	4,284,349	4,701,384
Retail trade	4,559,954	4,750,506	4,748,831	4,779,405	4,683,207	4,428,561	4,971,605
Restaurants and hotels	2,175,001	2,120,902	2,125,705	2,064,384	2,031,014	2,069,128	3,387,204
Finance and insurance	11,182,869	9,498,598	8,137,370	5,172,881	3,967,279	3,996,569	4,029,124
Real estate	4,719,762	4,515,933	4,422,844	3,975,668	3,749,071	3,645,049	3,800,880
Transportation, communications and public utilities	3,768,492	3,411,305	2,766,032	2,333,637	2,396,844	2,455,264	4,171,044
Service	10,031,218	10,679,435	11,051,571	13,136,369	15,331,430	14,585,688	16,380,308
Total	59,865,860	58,570,738	61,853,473	54,066,127	52,445,857	51,264,867	58,732,877

Loss-making corporations (loss < 0)							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	334,277	330,282	339,937	339,281	385,264	437,080	494,652
Mining	195,949	270,883	275,612	305,590	341,144	245,806	333,902
Construction	2,036,502	2,019,252	2,065,134	1,919,699	1,854,411	1,906,232	2,128,270
Textile	458,570	443,333	451,046	410,448	410,664	414,936	530,278
Chemical	1,182,737	1,494,322	1,252,971	1,001,855	885,611	1,182,656	1,104,820
Steel and metals	969,694	880,979	1,208,609	835,266	806,519	740,825	984,117
Machinery	3,383,434	4,109,845	3,991,513	4,700,298	3,217,689	3,701,738	4,609,416
Food manufacturing	719,784	687,124	736,815	719,289	722,233	784,099	932,927
Publishing and printing	520,924	536,677	541,173	491,332	536,124	528,323	633,568
Other manufacturing	987,768	1,035,212	1,119,534	1,055,718	1,042,632	1,062,449	1,155,031
Wholesale trade	3,412,077	3,489,509	3,321,677	2,863,754	2,893,512	2,891,574	3,386,126
Retail trade	3,110,581	3,307,382	3,289,298	3,200,389	3,262,474	3,124,130	3,756,888
Restaurants and hotels	1,494,263	1,401,335	1,378,587	1,363,364	1,415,361	1,523,406	3,050,003
Finance and insurance	8,584,055	7,126,396	4,843,060	2,666,954	2,253,092	2,976,655	2,837,159
Real estate	2,825,235	2,580,200	2,417,393	2,157,290	2,169,303	2,337,906	2,518,330
Transportation, communications and public utilities	2,698,929	1,509,270	1,535,304	1,482,201	1,549,893	1,822,067	3,616,210
Service	6,542,108	7,167,500	7,377,144	9,252,423	11,221,425	11,147,596	13,106,638
Total	39,456,888	38,389,501	36,144,808	34,765,151	34,967,349	36,827,478	45,178,335

Loss-making corporations (loss = 0)							
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	141,231	151,824	154,114	178,331	166,826	143,877	132,313
Mining	64,519	29,845	48,645	35,026	33,275	66,016	30,020
Construction	1,788,218	1,586,679	1,443,740	1,365,038	1,271,175	1,140,125	1,007,674
Textile	171,349	181,570	186,640	181,858	148,176	130,913	111,725
Chemical	261,447	299,910	329,277	288,970	267,432	272,834	298,161
Steel and metals	400,912	374,595	5,058,483	378,865	313,852	262,857	212,140
Machinery	707,392	679,391	772,527	774,573	1,066,919	724,656	685,601
Food manufacturing	293,167	305,477	315,916	303,303	274,632	265,039	233,609
Publishing and printing	227,788	238,535	232,439	221,204	198,374	185,279	148,761
Other manufacturing	463,299	431,182	448,275	430,928	371,929	365,524	330,847
Wholesale trade	1,378,060	1,349,819	1,422,095	1,365,286	1,259,383	1,150,321	1,040,430
Retail trade	1,054,500	1,179,543	1,244,586	1,249,892	1,141,012	1,113,076	1,043,752
Restaurants and hotels	538,124	565,255	572,487	560,403	518,363	472,852	329,516
Finance and insurance	983,056	1,110,721	1,797,574	905,334	691,430	569,563	562,441
Real estate	1,571,238	1,626,902	1,690,469	1,592,133	1,411,972	1,230,823	1,201,152
Transportation, communications and public utilities	487,313	575,539	686,261	555,260	580,361	478,385	395,117
Service	2,748,941	2,847,101	3,107,995	3,240,653	3,078,514	2,988,982	2,864,509
Total	13,252,794	13,533,890	19,511,523	13,627,059	12,793,625	11,561,122	10,627,767

Table 29. Loss Carryforward to the Next Year by Industry (continued)

Profit-making corporations								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	3,060	5,025	4,431	4,266	3,633	4,241	2,686	
Mining	27,760	6,852	22,610	24,272	29,010	28,500	20,201	
Construction	288,058	274,891	202,314	129,363	87,066	73,744	60,903	
Textile	97,964	50,173	35,164	31,970	23,239	24,375	13,958	
Chemical	458,367	303,571	586,372	431,578	473,130	385,116	304,677	
Steel and metals	577,099	441,069	250,008	432,957	235,656	168,201	111,716	
Machinery	1,032,068	547,457	656,665	630,794	502,618	348,883	502,415	
Food manufacturing	139,683	151,634	83,683	70,821	49,619	35,690	55,954	
Publishing and printing	101,826	70,578	98,250	87,432	41,245	39,155	48,252	
Other manufacturing	61,883	149,556	147,037	118,792	108,300	131,091	72,736	
Wholesale trade	569,455	667,007	798,414	475,624	265,720	242,454	274,828	
Retail trade	394,874	263,580	214,947	329,124	279,721	191,355	170,966	
Restaurants and hotels	142,614	154,312	174,631	140,618	97,290	72,871	7,685	
Finance and insurance	1,615,758	1,261,482	1,496,736	1,600,593	1,022,758	450,350	629,524	
Real estate	323,289	308,831	314,981	226,245	167,797	76,320	81,398	
Transportation, communications and public utilities	582,250	1,326,496	544,467	296,176	266,589	154,812	159,717	
Service	740,169	664,834	566,433	643,292	1,031,492	449,110	409,161	
Total	7,156,178	6,647,348	6,197,142	5,673,917	4,684,883	2,476,268	2,926,775	
Capital with 100 million yen or less (or unknown)								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	438,824	460,791	468,834	493,431	528,977	556,857	595,736	
Mining	128,724	148,603	218,377	214,457	265,504	273,328	195,323	
Construction	3,671,894	3,522,130	3,423,940	3,216,246	3,039,540	2,875,089	2,978,104	
Textile	642,048	588,068	591,950	556,597	519,269	503,614	567,507	
Chemical	817,552	874,203	963,498	860,309	900,187	990,116	1,117,574	
Steel and metals	990,968	960,411	5,687,030	874,932	776,887	757,490	840,955	
Machinery	1,993,244	2,005,221	2,027,771	1,916,559	1,827,155	1,959,919	2,213,441	
Food manufacturing	907,994	938,010	957,057	950,285	952,561	966,177	1,116,458	
Publishing and printing	687,167	705,509	730,243	689,289	672,312	676,252	684,183	
Other manufacturing	1,220,457	1,269,430	1,375,707	1,281,886	1,231,407	1,252,206	1,326,495	
Wholesale trade	4,193,986	4,246,104	4,299,997	4,054,114	3,918,550	3,777,122	3,997,307	
Retail trade	3,710,684	3,814,671	4,010,770	4,219,070	4,261,317	3,994,207	4,334,286	
Restaurants and hotels	1,971,247	1,952,510	1,963,360	1,923,072	1,913,846	1,952,192	3,001,967	
Finance and insurance	5,761,595	4,727,897	3,311,561	2,289,064	1,896,627	1,672,557	1,778,339	
Real estate	4,140,467	4,011,092	4,012,860	3,629,237	3,466,677	3,372,565	3,386,638	
Transportation, communications and public utilities	1,420,225	1,413,200	1,422,741	1,384,855	1,408,120	1,474,735	1,914,423	
Service	8,316,272	8,945,980	9,623,833	10,873,631	10,229,546	10,581,881	11,706,139	
Total	41,013,348	40,583,827	45,089,530	39,427,035	37,808,482	37,656,309	41,754,875	
Capital with over 100 million yen								unit: million yen
	2014	2015	2016	2017	2018	2019	2020	
Agriculture, forestry and fisheries	39,744	26,340	29,648	28,447	26,747	28,341	33,915	
Mining	131,744	158,978	128,490	150,430	137,925	66,994	188,799	
Construction	440,884	358,692	287,248	197,854	173,112	245,010	218,742	
Textile	85,835	87,008	80,900	67,679	62,810	66,612	88,454	
Chemical	1,084,999	1,223,600	1,205,123	862,094	725,986	850,490	590,084	
Steel and metals	956,737	736,232	830,071	772,156	579,139	414,394	467,018	
Machinery	3,129,650	3,331,472	3,392,933	4,189,107	2,960,072	2,815,358	3,583,991	
Food manufacturing	244,640	206,226	179,357	143,127	93,924	98,651	106,032	
Publishing and printing	163,371	140,282	141,618	110,679	103,431	76,505	146,399	
Other manufacturing	292,494	346,520	339,139	323,552	291,453	306,858	232,119	
Wholesale trade	1,165,606	1,260,231	1,242,189	650,551	500,065	507,226	704,077	
Retail trade	849,270	935,835	738,061	560,336	421,890	434,354	637,319	
Restaurants and hotels	203,754	168,391	162,345	141,312	117,168	116,936	385,236	
Finance and insurance	5,421,274	4,770,701	4,825,809	2,883,817	2,070,652	2,324,011	2,250,785	
Real estate	579,295	504,841	409,984	346,431	282,394	272,483	414,242	
Transportation, communications and public utilities	2,348,267	1,998,105	1,343,291	948,783	988,724	980,529	2,256,621	
Service	1,714,946	1,733,455	1,427,739	2,262,738	5,101,884	4,003,806	4,674,169	
Total	18,852,511	17,986,911	16,763,943	14,639,092	14,637,375	13,608,559	16,978,002	

Source: Authors' calculation

porations for the current fiscal year. Therefore, the increase or decrease in the total amount is due not only to the application of deductions by the corporation, but also to changes in the number of corporations due to changes in the corporation's status. Corporations with negative income before loss carryforward deductions, such as those with consecutive years of negative income before loss carryforward deductions, continue to hold the loss carryforward but do not apply the loss carryforward deduction in the current fiscal year. However, due to the carryforward period limit, unused loss carryforward from previous years will expire.

Therefore, the loss carryforward of corporations with negative income before loss carryforward deductions can increase or decrease.

Table 29 shows that loss-making corporations, whose income after loss carryforward deductions is negative, have a large share of loss carryforwards. Profit-making corporations have smaller loss carryforwards than loss-making corporations, partly because they apply current-period deductions, and their share of total loss carryforwards ranged from approximately 12.0% in FY2014 to over 10% until FY2017, but has since trended downward to approximately 5.0% in FY2020. Since profit-making corporations still have positive income even after loss carryforward deductions, loss carryforwards are expected to decrease.

The fifth and sixth Tables in Table 28 show loss carryforwards by industry and capital size. By capital size, corporations with capital of 100 million yen or less account for around 70% of the total. Considering the breakdown of the number of corporations, it can be said that corporations with capital of over 100 million yen have larger loss carryforwards per corporation. Looking at loss carryforwards by industry, the distribution by industry shows a generally similar trend in each fiscal year, regardless of capital size. However, there was a notable increase in loss carryforwards for corporations in the steel and metals industry with capital of 100 million yen or less in FY2016 and for corporations in the service industry with capital of over 100 million yen in FY2018.

VI-4. Distribution of Corporate Tax Amount

Table 30 shows the total corporate tax amount by industry. This amount includes both profit-making and loss-making corporations. Table 30 shows that the service industry paid the largest amount of corporate tax in total every fiscal year. The middle Table of Table 30 shows the breakdown by industry, at 18%. The next largest was finance and insurance in all years except FY2019, followed by transportation, communications and public utilities in FY2019. The third largest industry was wholesale in FY2014, 2019, and 2020, and transportation, communications and public utilities from FY2015 to 2018. The fourth largest industry was transportation, communications and public utilities in FY2014, wholesale from FY2015 to 2018, and construction in FY2019 and 2020. In terms of the total corporate tax amount, the three industries with the highest tax payments accounted for just over 40%, and the four industries with the highest tax payments accounted for just over 50% in each fiscal year.

Table 30 also shows the corporate tax amount per corporation in each industry. The industry with the highest corporate tax per corporation was finance and insurance except for FY2019, in which it was chemicals. The next highest industry was mining in FY2014, chemicals from FY2015 to 2018 and FY2020, and finance and insurance in FY2019. The third highest industry was chemicals in FY2014, and transportation, communications and public utilities since FY2015. In these industries, the average amount per corporation exceeds 10 million yen.

Table 31 shows the number of corporations by industry that pay over 5 million yen in

Table 30. Corporate Tax Amount by Industry

	unit: million yen						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	28,574	37,426	45,550	50,705	39,961	38,149	43,019
Mining	64,980	25,838	24,681	23,035	23,024	25,224	16,387
Construction	686,122	815,171	900,609	961,232	998,837	1,057,343	1,057,901
Textile	46,789	47,500	47,088	49,944	48,874	47,924	37,980
Chemical	572,429	638,906	638,423	688,424	649,339	671,914	656,445
Steel and metals	239,594	209,501	223,079	254,645	245,998	225,742	191,525
Machinery	838,406	705,450	676,311	845,419	839,830	667,920	652,366
Food manufacturing	221,856	251,517	280,779	286,838	282,314	261,671	256,746
Publishing and printing	73,065	78,952	79,908	74,274	79,138	102,362	95,571
Other manufacturing	336,858	321,898	315,900	358,294	402,028	366,845	443,308
Wholesale trade	1,010,918	1,030,214	1,014,260	1,125,133	1,150,822	1,128,959	1,064,569
Retail trade	667,418	735,828	662,952	687,555	670,881	673,504	811,107
Restaurants and hotels	120,598	146,189	155,574	155,067	155,326	139,004	56,219
Finance and insurance	1,522,908	1,455,179	1,269,716	1,312,262	1,510,643	995,688	1,268,471
Real estate	582,504	624,848	708,678	791,876	860,144	878,443	850,783
Transportation, communications and public utilities	966,895	1,176,192	1,160,399	1,265,806	1,269,531	1,285,923	988,864
Service	1,743,695	1,798,138	1,757,520	1,870,066	2,112,825	2,008,567	2,095,779

	unit: %						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	0.29	0.37	0.46	0.47	0.35	0.36	0.41
Mining	0.67	0.26	0.25	0.21	0.20	0.24	0.15
Construction	7.06	8.07	9.04	8.90	8.81	10.00	9.99
Textile	0.48	0.47	0.47	0.46	0.43	0.45	0.36
Chemical	5.89	6.33	6.41	6.37	5.73	6.35	6.20
Steel and metals	2.46	2.07	2.24	2.36	2.17	2.13	1.81
Machinery	8.62	6.99	6.79	7.83	7.41	6.32	6.16
Food manufacturing	2.28	2.49	2.82	2.66	2.49	2.47	2.43
Publishing and printing	0.75	0.78	0.80	0.69	0.70	0.97	0.90
Other manufacturing	3.46	3.19	3.17	3.32	3.55	3.47	4.19
Wholesale trade	10.40	10.20	10.18	10.42	10.15	10.68	10.06
Retail trade	6.86	7.29	6.66	6.37	5.92	6.37	7.66
Restaurants and hotels	1.24	1.45	1.56	1.44	1.37	1.31	0.53
Finance and insurance	15.66	14.41	12.75	12.15	13.32	9.42	11.98
Real estate	5.99	6.19	7.11	7.33	7.59	8.31	8.04
Transportation, communications and public utilities	9.94	11.65	11.65	11.72	11.20	12.16	9.34
Service	17.93	17.81	17.64	17.31	18.63	18.99	19.80

	unit: 10 thousand yen						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	87	110	129	137	105	97	107
Mining	1,856	744	717	685	693	781	523
Construction	169	199	217	227	233	244	241
Textile	175	182	184	199	200	201	164
Chemical	1,754	1,985	2,006	2,196	2,101	2,194	2,169
Steel and metals	480	426	459	530	519	482	415
Machinery	1,092	930	902	1,142	1,148	922	916
Food manufacturing	529	604	676	693	687	640	633
Publishing and printing	219	242	251	239	261	346	331
Other manufacturing	501	483	478	546	619	569	696
Wholesale trade	430	442	438	488	503	495	472
Retail trade	207	231	210	220	218	221	270
Restaurants and hotels	102	123	130	128	127	112	45
Finance and insurance	3,142	2,980	2,597	2,671	3,046	1,984	2,505
Real estate	196	206	227	245	259	257	242
Transportation, communications and public utilities	1,184	1,412	1,366	1,465	1,443	1,431	1,085
Service	243	245	234	243	267	246	250

Source: Authors' calculation

Table 31. The Number of Corporations Paying Corporate Tax more than 5 Million Yen by Industry

All corporations	unit: corporations						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	942	1,228	1,465	1,519	1,313	1,266	1,295
Mining	343	339	339	393	383	384	390
Construction	16,876	19,054	20,258	21,881	23,129	25,948	26,703
Textile	851	863	882	883	917	901	779
Chemical	3,646	3,691	3,868	4,036	4,057	3,985	3,899
Steel and metals	4,199	4,146	4,278	4,892	5,036	4,732	3,936
Machinery	7,052	7,283	7,511	8,325	8,698	8,083	7,073
Food manufacturing	2,355	2,612	2,782	2,733	2,610	2,540	2,385
Publishing and printing	1,325	1,299	1,333	1,281	1,271	1,248	1,134
Other manufacturing	3,418	3,539	3,669	4,044	4,017	3,921	3,651
Wholesale trade	17,727	18,338	18,190	19,361	19,301	18,856	18,465
Retail trade	8,510	9,307	9,057	9,110	8,789	9,018	9,440
Restaurants and hotels	2,526	2,859	2,996	3,014	2,889	2,852	1,384
Finance and insurance	2,869	3,074	3,028	3,020	3,060	2,911	3,052
Real estate	11,244	12,423	13,561	14,742	15,354	15,650	15,535
Transportation, communications and public utilities	6,447	7,871	8,103	7,862	7,860	8,041	7,506
Service	30,462	31,695	32,703	34,118	35,377	37,439	36,746

Share in all corporations paying more than 5 million yen	unit: %						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	0.78	0.95	1.09	1.08	0.91	0.86	0.90
Mining	0.28	0.26	0.25	0.28	0.27	0.26	0.27
Construction	13.97	14.70	15.12	15.49	16.06	17.56	18.62
Textile	0.70	0.67	0.66	0.63	0.64	0.61	0.54
Chemical	3.02	2.85	2.89	2.86	2.82	2.70	2.72
Steel and metals	3.48	3.20	3.19	3.46	3.50	3.20	2.75
Machinery	5.84	5.62	5.60	5.90	6.04	5.47	4.93
Food manufacturing	1.95	2.02	2.08	1.94	1.81	1.72	1.66
Publishing and printing	1.10	1.00	0.99	0.91	0.88	0.84	0.79
Other manufacturing	2.83	2.73	2.74	2.86	2.79	2.65	2.55
Wholesale trade	14.68	14.15	13.57	13.71	13.40	12.76	12.88
Retail trade	7.05	7.18	6.76	6.45	6.10	6.10	6.58
Restaurants and hotels	2.09	2.21	2.24	2.13	2.01	1.93	0.97
Finance and insurance	2.38	2.37	2.26	2.14	2.12	1.97	2.13
Real estate	9.31	9.58	10.12	10.44	10.66	10.59	10.84
Transportation, communications and public utilities	5.34	6.07	6.05	5.57	5.46	5.44	5.24
Service	25.22	24.45	24.40	24.16	24.56	25.34	25.63

Share in the number of corporations in the industry	unit: %						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	2.88	3.62	4.13	4.11	3.43	3.21	3.22
Mining	9.80	9.76	9.84	11.68	11.52	11.88	12.44
Construction	4.16	4.65	4.87	5.16	5.39	5.98	6.08
Textile	8.03	8.36	8.73	9.01	9.64	9.73	8.69
Chemical	11.17	11.46	12.15	12.87	13.12	13.01	12.88
Steel and metals	8.41	8.43	8.79	10.18	10.62	10.11	8.53
Machinery	9.18	9.60	10.01	11.24	11.88	11.15	9.92
Food manufacturing	5.61	6.27	6.69	6.60	6.35	6.21	5.88
Publishing and printing	3.97	3.98	4.18	4.13	4.19	4.21	3.92
Other manufacturing	4.10	4.29	4.49	5.00	5.02	4.96	4.69
Wholesale trade	7.53	7.86	7.84	8.39	8.43	8.27	8.17
Retail trade	2.64	2.92	2.87	2.92	2.85	2.95	3.14
Restaurants and hotels	2.14	2.41	2.50	2.49	2.37	2.31	1.11
Finance and insurance	5.91	6.29	6.19	6.14	6.17	5.79	6.02
Real estate	3.79	4.09	4.33	4.57	4.62	4.58	4.41
Transportation, communications and public utilities	7.89	9.45	9.53	9.10	8.93	8.94	8.23
Service	4.25	4.31	4.34	4.42	4.47	4.58	4.39

Source: Authors' calculation

corporate tax. Looking at the percentage of corporations that pay over 5 million yen overall, the service industry had the highest percentage, at around 25%, in every fiscal year. This was followed by wholesale in FY2014 only, and construction since FY2015. The third highest industry was construction in FY2014 only, and wholesale since FY2015. The fourth highest industry was real estate. The bottom panel of Table 31 also shows the percentage of corporations that pay over 5 million yen overall in each industry. This shows that the chemical industry had the highest percentage of corporations that pay over 5 million yen in that industry. The next highest was mining except for FY2016 and 2018, followed by machinery in FY2016 and 2018.

Table 32 shows the amount of corporate tax paid by corporations paying over 5 million yen by industry. Looking at the industries of corporations paying over 5 million yen, the service industry accounted for the largest share of corporate tax paid by corporations paying over 5 million yen overall. This was followed by finance and insurance except for FY2019,

Table 32. Corporate Tax Amount of Corporations Paying Corporate Tax more than 5 Million Yen: by Industry

All corporations	unit: million yen						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	22,857	29,838	36,193	40,850	31,022	29,058	33,466
Mining	64,003	24,974	23,802	22,177	22,117	24,379	15,480
Construction	587,109	708,733	784,052	837,086	866,802	913,112	911,118
Textile	43,280	43,798	43,137	46,056	44,945	44,149	34,534
Chemical	564,754	631,229	630,474	680,083	640,929	663,647	648,691
Steel and metals	227,084	196,481	209,284	239,804	229,568	210,240	179,001
Machinery	820,187	686,027	656,029	824,036	816,668	646,351	633,996
Food manufacturing	215,384	244,442	272,979	278,996	274,929	254,446	250,039
Publishing and printing	69,025	74,744	75,528	69,779	74,723	97,962	91,676
Other manufacturing	324,795	309,425	302,170	344,022	387,134	352,268	430,004
Wholesale trade	958,926	978,105	959,523	1,068,788	1,093,607	1,072,434	1,010,802
Retail trade	622,910	687,821	613,502	636,955	621,601	622,031	757,219
Restaurants and hotels	106,992	130,359	138,940	138,171	138,253	121,827	45,489
Finance and insurance	1,515,334	1,447,028	1,261,757	1,304,146	1,502,418	987,058	1,258,922
Real estate	518,465	555,555	632,053	708,943	771,139	784,486	751,077
Transportation, communications and public utilities	945,919	1,151,062	1,133,433	1,238,947	1,243,146	1,259,204	964,371
Service	1,602,146	1,645,934	1,594,384	1,696,039	1,932,478	1,818,406	1,901,351

Share in the corporate tax amount in the industry	unit: %						
	2014	2015	2016	2017	2018	2019	2020
Agriculture, forestry and fisheries	79.99	79.73	79.46	80.56	77.63	76.17	77.80
Mining	98.50	96.66	96.44	96.27	96.06	96.65	94.46
Construction	85.57	86.94	87.06	87.08	86.78	86.36	86.13
Textile	92.50	92.21	91.61	92.22	91.96	92.12	90.93
Chemical	98.66	98.80	98.75	98.79	98.70	98.77	98.82
Steel and metals	94.78	93.79	93.82	94.17	93.32	93.13	93.46
Machinery	97.83	97.25	97.00	97.47	97.24	96.77	97.18
Food manufacturing	97.08	97.19	97.22	97.27	97.38	97.24	97.39
Publishing and printing	94.47	94.67	94.52	93.95	94.42	95.70	95.92
Other manufacturing	96.42	96.13	95.65	96.02	96.30	96.03	97.00
Wholesale trade	94.86	94.94	94.60	94.99	95.03	94.99	94.95
Retail trade	93.33	93.48	92.54	92.64	92.65	92.36	93.36
Restaurants and hotels	88.72	89.17	89.31	89.10	89.01	87.64	80.91
Finance and insurance	99.50	99.44	99.37	99.38	99.46	99.13	99.25
Real estate	89.01	88.91	89.19	89.53	89.65	89.30	88.28
Transportation, communications and public utilities	97.83	97.86	97.68	97.88	97.92	97.92	97.52
Service	91.88	91.54	90.72	90.69	91.46	90.53	90.72

Source: Authors' calculation

and transportation, communications and public utilities in FY2019 alone. Wholesale followed these two. Looking at the bottom of Table 32, which shows the percentage of corporate tax paid by corporations paying over 5 million yen out of the total corporate tax amount in the industry (see Table 30), Table 32 shows that, with the exception of agriculture, forestry and fisheries, it accounts for roughly 90% in most industries. These figures are close to the percentage of corporate tax paid by corporations paying over 5 million yen on an all-corporation basis shown in Table 13.

VII. Family and non-family Corporations

VII-1. Distribution of the Number of Corporations

In this section, we look at the loss-making corporations, dividing them into family corporations and non-family corporations. Table 1 shows that when all corporations are divided into family corporations (including unknown), specified family corporations, and non-family corporations, family corporations make up the majority. Therefore, in this section, we focus on the actual state of non-family corporations and specified family corporations (the remaining corporations are family corporations, and we can assume that the trends are roughly the same as those in the previous section, which looked at all corporations without dividing them into family and non-family corporations).

Table 33 shows the number of corporations by capital size for non-family corporations and specified family corporations: those with capital of 10 million yen or less, those with capital of over 10 million yen but less than 100 million yen, and those with capital of over 100 million yen. Table 33 shows that corporations with capital of over 100 million yen ac-

Table 33. The Number of Non-family and Specified Family Corporations: by Capital Size

Non-family corporations								unit: corporations
Capital class	2014	2015	2016	2017	2018	2019	2020	
< 10 mil yen	42,530	43,347	44,511	47,082	48,017	51,378	50,898	
10 mil – 100 mil	13,079	12,633	12,049	11,415	11,192	11,232	10,935	
100 mil – 1 bil	2,270	2,159	2,039	1,988	1,934	1,838	1,784	
1 bil+	1,910	1,900	1,875	1,843	1,823	1,824	1,776	
Total	59,789	60,039	60,474	62,328	62,966	66,272	65,393	
Share of ≤ 100 mil	93.01%	93.24%	93.53%	93.85%	94.03%	94.47%	94.56%	
Share of > 100 mil	6.99%	6.76%	6.47%	6.15%	5.97%	5.53%	5.44%	

Specified family corporations								unit: corporations
Capital class	2014	2015	2016	2017	2018	2019	2020	
< 10 mil yen	31,572	28,054	24,633	21,984	19,740	17,830	15,610	
10 mil – 100 mil	3,549	3,254	2,928	2,714	2,581	2,501	2,354	
100 mil – 1 bil	4,368	4,130	3,935	3,788	3,601	3,486	3,247	
1 bil+	397	360	340	321	311	320	318	
Total	39,886	35,798	31,836	28,807	26,233	24,137	21,529	
Share of ≤ 100 mil	88.05%	87.46%	86.57%	85.74%	85.09%	84.23%	83.44%	
Share of > 100 mil	11.95%	12.54%	13.43%	14.26%	14.91%	15.77%	16.56%	

Source: Authors' calculation

count for a higher proportion for both non-family corporations and specified family corporations, compared to the average of all corporations (i.e., family corporations, etc.). In particular, specified family corporations with capital of over 100 million yen accounted for just under 12% of all specified family corporations in FY2014, but rose to 16.56% in FY2020. Conversely, the proportion for non-family corporations declined during this period, from approximately 7% in FY2014 to approximately 5.4% in FY2020.

As in Sections III, V, and VI, we examine the differences between income before and after loss carryforward deduction for non-family corporations and specified family corporations. Table 34 shows the number and percentage of corporations with positive, zero, and negative (losses greater than zero) income before loss carryforward deduction. Table 34 shows that in every fiscal year, both non-family corporations and specified family corporations have a higher proportion of corporations with capital of over 100 million yen than the average for all corporations. The proportion of non-family corporations with income before loss carryforward deduction of zero or less is lower than the average for all corporations (see Table 3), while the proportion is higher for specified family corporations than the average for all corporations. This is likely due to differences in the environments in which non-family corporations and specified family corporations operate. In other words, non-family corporations, as defined under the Corporate Tax Act, are corporations in which no specific shareholders hold a majority of their shares. Therefore, they are likely to have a stronger need for immediate shareholder returns than family corporations and specified family corporations. Therefore, it is likely that they are required to maximize their current profits (since current profits cannot be estimated in this paper, income before loss carryforward deduction is used as a proxy). For this reason, it is likely that the proportion of non-family corporations with income before loss carryforward deduction of 0 yen or less will be low. Even if a specified family corporation has capital of over 100 million yen, it is entirely possible that it is an unlisted corporation, given the shareholder composition by definition.

Table 34. Income before Loss Carryforward Deduction: Non-family and Specified Corporations

Non-family corporations		unit: corporations						
Income/loss before deduction	2014	2015	2016	2017	2018	2019	2020	
Loss > 0	21,397	20,685	20,779	21,891	22,884	24,490	24,198	
Loss = 0	636	639	642	781	711	794	771	
Income > 0	37,756	38,715	39,053	39,656	39,371	40,988	40,424	
Share of loss >= 0	36.85%	35.52%	35.42%	36.38%	37.47%	38.15%	38.18%	
Share of loss > 0	35.79%	34.45%	34.36%	35.12%	36.34%	36.95%	37.00%	
Share of loss = 0	1.06%	1.06%	1.06%	1.25%	1.13%	1.20%	1.18%	
Share of income > 0	63.15%	64.48%	64.58%	63.62%	62.53%	61.85%	61.82%	

Specified family corporations		unit: corporations						
Income/loss before deduction	2014	2015	2016	2017	2018	2019	2020	
Loss > 0	17,556	15,604	13,772	12,317	11,388	10,670	9,116	
Loss = 0	1,079	942	956	953	941	831	783	
Income > 0	21,251	19,252	17,108	15,537	13,904	12,636	11,630	
Share of loss >= 0	46.72%	46.22%	46.26%	46.07%	47.00%	47.65%	45.98%	
Share of loss > 0	44.02%	43.59%	43.26%	42.76%	43.41%	44.21%	42.34%	
Share of loss = 0	2.71%	2.63%	3.00%	3.31%	3.59%	3.44%	3.64%	
Share of income > 0	53.28%	53.78%	53.74%	53.93%	53.00%	52.35%	54.02%	

Source: Authors' calculation

Table 35 shows the distribution of loss-making corporations and profit-making corporations for non-family corporations and specified family corporations in terms of income after loss carryforward deductions. Table 35 shows that in every fiscal year, both non-family corporations and specified family corporations have a higher percentage of corporations with capital of over 100 million yen than the all-corporate average, but the proportion of loss-making corporations among non-family corporations is lower than the all-corporate average (see Table 2), at around 50%, while the proportion among specified family corporations is higher than the all-corporate average. This is also thought to be due to the fact that income after loss carryforward deductions is affected by the situation of income before loss carryforward deductions, as mentioned above.

VII-2. Distribution of Corporate Tax Amount

Finally, let's look at the amount of corporate tax paid by non-family corporations and specified family corporations. Table 36 shows the amount of corporate tax paid by loss-making corporations and profit-making corporations for non-family corporations and specified family corporations. As we have seen so far, the amount of corporate tax paid by profit-making corporations accounts for almost all of the total corporate tax amount, but specified family corporations differ from non-family corporations in that, because they are subject to retained earnings tax, even loss-making corporations with negative income pay corporate tax.

Looking at the amount of corporate tax paid by non-family corporations and specified family corporations as a percentage of total corporate tax, Table 36 shows that while non-family corporations account for approximately 20-25%, specified family corporations account for only around 5%.

Table 35. Profit-making and Loss-making Corporations: Non-family and Specified Corporations

Non-family corporations		unit: corporations					
	2014	2015	2016	2017	2018	2019	2020
Loss > 0	21,397	20,685	20,779	21,891	22,884	24,490	24,198
Loss = 0	10,984	10,937	10,670	10,716	10,568	11,214	11,339
Total of loss-making corp	32,381	31,622	31,449	32,607	33,452	35,704	35,537
Total of profit-making corp	27,408	28,417	29,025	29,721	29,514	30,568	29,856
Share of loss-making corp	54.16%	52.67%	52.00%	52.32%	53.13%	53.87%	54.34%
Share of Loss > 0	35.79%	34.45%	34.36%	35.12%	36.34%	36.95%	37.00%
Share of Loss = 0	18.37%	18.22%	17.64%	17.19%	16.78%	16.92%	17.34%
Share of profit-making corp	45.84%	47.33%	48.00%	47.68%	46.87%	46.13%	45.66%

Specified family corporations		unit: corporations					
	2014	2015	2016	2017	2018	2019	2020
Loss > 0	17,556	15,604	13,772	12,317	11,388	10,670	9,116
Loss = 0	9,888	8,434	7,229	6,335	5,511	4,784	4,415
Total of loss-making corp	27,444	24,038	21,001	18,652	16,899	15,454	13,531
Total of profit-making corp	12,442	11,760	10,835	10,155	9,334	8,683	7,998
Share of loss-making corp	68.81%	67.15%	65.97%	64.75%	64.42%	64.03%	62.85%
Share of Loss > 0	44.02%	43.59%	43.26%	42.76%	43.41%	44.21%	42.34%
Share of Loss = 0	24.79%	23.56%	22.71%	21.99%	21.01%	19.82%	20.51%
Share of profit-making corp	31.19%	32.85%	34.03%	35.25%	35.58%	35.97%	37.15%

Source: Authors' calculation

Table 36. Corporate Tax Amount: Non-family and Specified Corporations

Non-family corporations							
	unit: million yen						
	2014	2015	2016	2017	2018	2019	2020
Loss > 0	15	54	33	14	32	10	8.46
Loss = 0	8.75	14.88	0.15	0	0	0	0.02
Sum of loss-making corp	24	68	33	14	32	10	8.48
Sum of profit-making corp	2,455,593	2,453,696	2,260,150	2,495,862	2,425,600	2,247,157	2,097,305
Total	2,455,617	2,453,764	2,260,183	2,495,876	2,425,632	2,247,168	2,097,314
Revenue share	25.25%	24.30%	22.69%	23.11%	21.39%	21.25%	19.81%

Specified family corporations							
	unit: million yen						
	2014	2015	2016	2017	2018	2019	2020
Loss > 0	130	164	95	336	314	131	144
Loss = 0	0.47	2.41	20	0.07	0.11	0.01	0
Sum of loss-making corp	131	166	116	336	314	131	144
Sum of profit-making corp	564,631	549,176	546,773	563,801	565,980	535,883	535,631
Total	564,762	549,343	546,889	564,137	566,294	536,014	535,775
Revenue share	5.81%	5.44%	5.49%	5.22%	4.99%	5.07%	5.06%

Source: Authors' calculation

VIII. Dynamics of Loss-making and Profit-making Corporations

VIII-1. Transition between Loss-making and Profit-making Corporations

The loss carryforwards detailed in Section VI-3 are expected to accumulate if a corporation is in the red almost every year. However, it is possible that the deduction cannot be applied and the deduction deadline will expire. Loss carryforwards are applied when a corporation eventually becomes profit-making, even if it incurs a loss temporarily. Therefore, this paper examines when a loss-making corporation becomes profit-making. This paper uses only seven years of tax return data, so the analysis period is limited to seven years, but it attempts to capture the trends of loss-making corporations.

Corporations with complete data for the seven years from FY2014 to FY2020 were classified by whether they were loss-making corporations or not, and the results are shown below for the number of years when they were loss-making corporations. Table 37 shows the distribution of the number of years they were loss-making corporations between FY2014 and FY2020 by capital size. There were 2,105,838 corporations with complete data for the seven years from FY2014 to FY2020. Of these, approximately 36.5% were loss-making corporations for all seven years, with the proportion increasing with smaller capital size. Meanwhile, approximately 14.4% of corporations have been profit-making corporations for seven consecutive years, with the proportion decreasing with smaller capital size. Among corporations with capital of over 100 million yen, the majority have been profit-making corporations for seven consecutive years.

Table 38 also shows the results from the same corporations as in Table 37 (corporations with data for the seven years from FY2014 to FY2020) to calculate how many years prior to FY2020 they have been loss-making corporations. According to Table 38, approximately

Table 37. The Number of Years with Loss: by Capital Size, FY2014-2020

All corporations	Total	Capital class			
		< 10 mil	10 mil - 100 mil	100 mil - 1 bil	1 bil+
N. of corporations	2,105,838	1,768,140	320,250	12,488	4,960
7 years	36.52%	38.75%	25.86%	6.29%	4.78%
6 years	10.16%	10.80%	7.00%	3.52%	2.62%
5 years	8.50%	8.89%	6.65%	3.59%	2.40%
4 years	7.65%	7.85%	6.79%	4.35%	2.92%
3 years	7.23%	7.23%	7.28%	6.49%	5.00%
2 years	7.21%	6.93%	8.58%	9.61%	9.25%
1 year	8.35%	7.59%	12.05%	17.39%	16.83%
0 year	14.39%	11.97%	25.80%	48.76%	56.19%

Source: Authors' calculation

Table 38. The Number of Consecutive Years with Loss: by Capital Size, FY2020

All corporations	Total	Capital class			
		< 10 mil	10 mil - 100 mil	100 mil - 1 bil	1 bil+
N. of corporations	2,105,838	1,768,140	320,250	12,488	4,960
7 consecutive years	36.52%	38.75%	25.86%	6.29%	4.78%
6 consecutive years	2.43%	2.55%	1.85%	0.89%	0.77%
5 consecutive years	2.82%	2.94%	2.23%	1.09%	0.65%
4 consecutive years	3.23%	3.36%	2.60%	1.51%	0.87%
3 consecutive years	3.91%	4.02%	3.37%	2.53%	1.90%
2 consecutive years	5.05%	5.09%	4.87%	4.19%	4.01%
1 year	9.10%	8.93%	9.94%	11.19%	10.63%
Profit making for all	36.95%	34.36%	49.28%	72.31%	76.41%

Source: Authors' calculation

36.5% have been loss-making corporations for seven consecutive years, as seen in Table 37. Only approximately 2.4% have been loss-making corporations for six consecutive years up to FY2020 (since FY2015), and the percentage of corporations that have remained loss-making corporations for two to six consecutive years up to FY2020 is not that high, at approximately 17.4%. The percentage of corporations that were profit-making in FY2019 but became loss-making corporations in FY2020 (current loss-making corporations) is approximately 9.1% (these corporations may have been loss-making corporations or profit-making corporations prior to FY2018). Of all corporations with data for the seven years from FY2014 to 2020, approximately 37.0% were profit-making corporations in FY2020 (these corporations may have been loss-making corporations or profit-making corporations prior to FY2019). As noted above, this ratio increases with increasing capital.

Being loss-making corporations in consecutive years does not necessarily mean that they applied loss carryforward deductions in consecutive years. Table 39 shows the distribution of the number of consecutive years for which a corporation applied a loss carryforward deduction. Table 39 also shows the distribution of the number of years for which a corporation

applied a loss carryforward deduction between FY2014 and 2020, broken down by capital size. Table 39 shows that, among all corporations, approximately 1.1% applied a loss carryforward deduction for all seven years. Because loss carryforward deductions are only available to corporations with positive income before loss carryforward deductions, the proportion of such corporations is likely low. Approximately 21.2% of all corporations did not apply a loss carryforward deduction for all seven years, with the proportion increasing with capital size. This is likely because, as shown in Table 37, the proportion of corporations that were profit-making for all seven years is higher with larger capital size, and many corporations do not have loss carryforwards to deduct. On the other hand, among corporations that did not apply a loss carryforward deduction for all seven years, some had income before loss carryforward deductions of zero or less for all seven years, making them ineligible for a loss carryforward deduction.

Table 40 shows that corporations that have applied loss carryforward deductions for seven consecutive years account for approximately 1.1% of all corporations. Even corporations that have applied loss carryforward deductions for two or more consecutive years account

Table 39. The Number of Years Applying Loss Carryforward Deduction: by Capital Size, FY2014-2020

All corporations	Total	Capital class			
		< 10 mil	10 mil – 100 mil	100 mil – 1 bil	1 bil+
N. of corporations	2,105,838	1,768,140	320,250	12,488	4,960
7 years	1.13%	1.10%	1.27%	1.20%	1.29%
6 years	4.06%	4.08%	4.04%	2.87%	1.98%
5 years	8.77%	9.04%	7.54%	4.48%	4.07%
4 years	14.35%	15.02%	11.13%	6.46%	5.38%
3 years	17.78%	18.65%	13.47%	8.77%	7.72%
2 years	17.43%	17.96%	14.87%	11.66%	11.07%
1 year	15.24%	14.97%	16.65%	16.45%	19.40%
0 year	21.23%	19.18%	31.03%	48.12%	49.11%

Source: Authors' calculation

Table 40. The Number of Consecutive Years Applying Loss Carryforward Deduction: by Capital Size, FY2020

All corporations	Total	Capital class			
		< 10 mil	10 mil – 100 mil	100 mil – 1 bil	1 bil+
N. of corporations	2,105,838	1,768,140	320,250	12,488	4,960
7 consecutive years	1.13%	1.10%	1.27%	1.20%	1.27%
6 consecutive years	0.83%	0.83%	0.79%	0.72%	0.46%
5 consecutive years	1.41%	1.44%	1.22%	1.08%	0.58%
4 consecutive years	2.34%	2.43%	1.90%	1.24%	1.03%
3 consecutive years	3.85%	4.06%	2.80%	1.91%	1.61%
2 consecutive years	7.24%	7.68%	5.07%	3.56%	2.96%
1 year	15.60%	16.46%	11.27%	8.01%	8.47%
Profit making for all	67.60%	65.99%	75.68%	82.29%	83.61%

Source: Authors' calculation

for only approximately 16.9%. The proportion decreases as the size of capital increases. Corporations that do not have loss carryforward deductions for the current fiscal year (2020) account for approximately 67.5% of all corporations. This includes not only profit-making corporations with no carryforward losses, but also corporations whose income before loss carryforward deductions is zero or less and therefore cannot apply loss carryforward deductions.

VIII-2. Transition between Loss-making and Profit-making Corporations

How do corporations transition between profit-making and loss-making? Table 41 shows the conditional probability for each year of how they transition from the current fiscal year to the next fiscal year for all corporations for the current fiscal year. In other words, it is the proportion of corporations that transition to a certain state in the next fiscal year out of all corporations that were in a certain state in the current fiscal year, and represents the conditional probability of a corporation being in a certain state. Therefore, for a certain state in the current fiscal year (rows in the Table), the total proportion of all states that can occur in the next fiscal year equals 100%. In Markov chain terms, this can be called the transition probability.

The composition ratios in Table 41 refer to the proportion of corporations in the corresponding state among all corporations with tax returns filed for the current fiscal year, plus corporations that did not exist in the current fiscal year but exist in the next fiscal year. For the following fiscal year, the proportion refers to all corporations with tax returns filed, plus corporations that existed in the current fiscal year but do not exist in the following fiscal year. Here, “non-existent” refers to corporations that did not file tax returns for the current fiscal year. “Non-existent” corporations include not only corporations that cease to exist due to bankruptcy or merger, but also corporations that are closed, in liquidation, or have become consolidated corporations. Since FY2020 is the final fiscal year in our data, and data for the next year are not available, the figures show the results for FY2014 through FY2019.

Table 41 presents that, for example, for FY2014, the proportion of corporations that were profit-making in FY2014 out of all corporations that existed in either FY2014 or FY2015 was approximately 32.02%, and the proportion of corporations that were profit-making in FY2014 that were also profit-making in FY2015 was approximately 79.21%.¹⁴ Among corporations that were profit-making in FY2014, the proportion of corporations that became loss-making corporations in FY2015, with positive income before loss carryforward deductions but zero income, was approximately 0.17%, the proportion of corporations that became loss-making corporations in FY2015, with income before loss carryforward deductions of zero or less, was approximately 19.40%, and the proportion of corporations that did not file corporate tax returns for FY2015 was approximately 1.23%.

¹⁴ Doi, Bessho, and Mori (2023) made this transition probability calculable by showing the probability of occurrence as the proportion of corporations facing the event among all corporations existing in both years.

Table 41. Transition Probability Matrix Across Profit-making and Loss-making Corporations

All corporations FY2014		unit: %				
		Next year				
		Profit	Loss		Non-existent	
			A	B		
Share		33.87	25.58	37.37	3.18	
Current	Profit-making Corporations	32.02	79.21	0.17	19.40	1.23
	Loss-making Corporations A: Income = 0	26.81	13.43	51.83	31.99	2.75
	Loss-making Corporations B: Income < 0	36.53	8.76	30.91	54.72	5.62
	Non-existent	4.65	36.88	7.34	55.78	
FY2015		Next year				
		Profit	Loss		Non-existent	
			A	B		
Share		35.04	24.82	36.92	3.22	
Current	Profit-making Corporations	33.53	79.24	0.16	19.41	1.19
	Loss-making Corporations A: Income = 0	25.23	13.42	52.35	31.31	2.91
	Loss-making Corporations B: Income < 0	36.75	8.94	30.86	54.53	5.67
	Non-existent	4.49	40.09	4.78	55.13	
FY2016		Next year				
		Profit	Loss		Non-existent	
			A	B		
Share		36.00	24.48	36.32	3.19	
Current	Profit-making Corporations	34.64	79.44	0.17	19.17	1.22
	Loss-making Corporations A: Income = 0	24.52	13.39	52.64	31.02	2.95
	Loss-making Corporations B: Income < 0	36.40	9.29	31.09	53.99	5.62
	Non-existent	4.43	40.97	4.36	54.67	
FY2017		Next year				
		Profit	Loss		Non-existent	
			A	B		
Share		36.48	23.69	36.63	3.20	
Current	Profit-making Corporations	35.62	79.13	0.16	19.47	1.23
	Loss-making Corporations A: Income = 0	24.25	13.32	52.19	31.47	3.02
	Loss-making Corporations B: Income < 0	35.88	9.32	30.10	54.92	5.65
	Non-existent	4.25	40.56	4.13	55.32	
FY2018		Next year				
		Profit	Loss		Non-existent	
			A	B		
Share		36.93	23.04	36.75	3.29	
Current	Profit-making Corporations	36.01	78.78	0.15	19.78	1.29
	Loss-making Corporations A: Income = 0	23.45	13.90	51.28	31.60	3.22
	Loss-making Corporations B: Income < 0	36.17	9.70	29.78	54.80	5.72
	Non-existent	4.36	40.98	4.26	54.76	
FY2019		Next year				
		Profit	Loss		Non-existent	
			A	B		
Share		36.25	22.31	37.63	3.81	
Current	Profit-making Corporations	36.45	74.18	0.14	23.98	1.70
	Loss-making Corporations A: Income = 0	22.87	15.24	47.70	33.47	3.59
	Loss-making Corporations B: Income < 0	36.47	10.73	30.70	52.08	6.49
	Non-existent	4.20	43.08	3.61	53.31	

Note: Loss-making corporations A are those whose income before loss carryforward deduction is positive and income after deduction is zero. Loss-making corporations B are those whose income before loss carryforward deduction is negative.

Source: Authors' calculation

Table 41 shows that the diagonal elements of the Table have high probabilities for every fiscal year, with the exception of “non-existent” corporations. This means that there is a high probability that the state of the next fiscal year remains unchanged from the current fiscal year. In other words, profit-making corporations are likely to remain profit-making in the next fiscal year, while loss-making corporations are likely to remain loss-making in the next fiscal year. During this period, the proportion of loss-making corporations with positive income before loss carryforward deductions but zero yen in income in the current fiscal year that also remained loss-making in the next fiscal year was approximately 52% except for FY2020. The proportion of loss-making corporations with income before loss carryforward deductions of zero yen or less in the current fiscal year that also remained loss-making in the next fiscal year was approximately 54%. In contrast, the proportion of profit-making corporations in the current fiscal year that remained profit-making in the next fiscal year was approximately 79% except for FY2020, indicating a high transition probability.

Of course, it is possible for a corporation that is temporarily in the red to become a profit-making corporation. What is the probability of this happening? For example, in FY2014, the probability that a loss-making corporation with positive income before loss carryforward deductions but zero income in FY2014 becomes a profit-making corporation in FY2015 is approximately 13.4%, and the probability that a loss-making corporation with negative income before loss carryforward deductions in FY2014 becomes a profit-making corporation in FY2015 is approximately 8.8%.

Here FY2014 was used as an example, but Table 41 shows that the trend is roughly the same for fiscal years 2015 to 2019.

We examine the inter-year transition probability between profit-making and loss-making corporations, dividing them into those with capital of 100 million yen or less and those with capital of over 100 million yen. Table 42 shows the inter-year transition probability, focusing only on corporations with capital of 100 million yen or less. Table 43 shows the transition probability for corporations with capital of over 100 million yen. Comparing Tables 42 and 43, in both cases, the diagonal elements of the Tables are high for every fiscal year, except for “non-existent.” This is the same as Table 41. The transition probability for a profit-making corporation to continue to be profit-making is higher for corporations with capital of 100 million yen or less in Table 42 (for example, approximately 74.1% in FY2020) is lower compared to the 80% range for corporations with capital of over 100 million yen in Table 43 (for example, approximately 82.8% in FY2020). This is consistent with the comparison of Tables 6 and 14, which shows that the proportion of profit-making corporations is higher for corporations with capital of over 100 million yen than for corporations with capital of 100 million yen or less.

VIII-3. Capital Increases and Decreases of Loss-making and Profit-making Corporations

As seen in Table 1, the number of corporations with capital of over 100 million yen decreased during the analyzed period. This may be because corporations with capital of over

Table 42. Transition Profitability Matrix Across Profit-making and Loss-making Corporations with Capital of 100 Million or Less

		Next year				Non-existent
		Profit	Loss			
			A	B		
Corporations with capital of 100 million yen or less (or unknown) FY2014		Share	33.52	25.78	37.51	3.18
Current	Profit-making Corporations	31.64	79.04	0.16	19.61	1.20
	Loss-making Corporations A: Income = 0	27.03	13.42	51.83	32.00	2.75
	Loss-making Corporations B: Income < 0	36.66	8.63	31.04	54.72	5.61
	Non-existent	4.67	36.89	7.36	55.75	
FY2015		Share	34.71	25.01	37.06	3.22
Current	Profit-making Corporations	33.17	79.06	0.15	19.61	1.18
	Loss-making Corporations A: Income = 0	25.43	13.42	52.35	31.32	2.91
	Loss-making Corporations B: Income < 0	36.89	8.84	30.98	54.51	5.67
	Non-existent	4.51	40.11	4.79	55.11	
FY2016		Share	35.69	24.66	36.46	3.19
Current	Profit-making Corporations	34.31	79.27	0.16	19.36	1.20
	Loss-making Corporations A: Income = 0	24.71	13.38	52.64	31.02	2.95
	Loss-making Corporations B: Income < 0	36.53	9.20	31.21	53.97	5.62
	Non-existent	4.46	41.00	4.37	54.62	
FY2017		Share	36.20	23.85	36.74	3.20
Current	Profit-making Corporations	35.30	78.98	0.16	19.64	1.22
	Loss-making Corporations A: Income = 0	24.43	13.31	52.19	31.48	3.02
	Loss-making Corporations B: Income < 0	36.00	9.25	30.21	54.89	5.65
	Non-existent	4.27	40.59	4.14	55.28	
FY2018		Share	36.67	23.19	36.84	3.29
Current	Profit-making Corporations	35.73	78.65	0.15	19.93	1.27
	Loss-making Corporations A: Income = 0	23.61	13.90	51.28	31.60	3.22
	Loss-making Corporations B: Income < 0	36.28	9.63	29.89	54.76	5.72
	Non-existent	4.38	41.02	4.27	54.71	
FY2019		Share	36.03	22.46	37.70	3.81
Current	Profit-making Corporations	36.19	74.05	0.14	24.12	1.69
	Loss-making Corporations A: Income = 0	23.02	15.24	47.70	33.47	3.59
	Loss-making Corporations B: Income < 0	36.56	10.67	30.82	52.02	6.49
	Non-existent	4.22	43.12	3.62	53.27	

Note: Loss-making corporations A are those whose income before loss carryforward deduction is positive and income after deduction is zero. Loss-making corporations B are those whose income before loss carryforward deduction is negative.

Source: Authors' calculation

Table 43. Transition Probability Matrix Across Profit-making and Loss-making Corporations with Capital of over 100 Million

Corporations with capital of over 100 million yen
FY2014

unit: %

		Next year				
		Profit	Loss		Non-existent	
			A	B		
	Share	71.88	3.65	21.08	3.40	
Current	Profit-making Corporations	72.79	87.30	0.78	9.50	2.42
	Loss-making Corporations A: Income = 0	2.76	20.21	53.69	22.71	3.39
	Loss-making Corporations B: Income < 0	22.51	31.46	6.93	54.77	6.84
	Non-existent	1.94	35.50	2.10	62.39	

FY2015

		Next year				
		Profit	Loss		Non-existent	
			A	B		
	Share	72.54	3.46	21.07	2.93	
Current	Profit-making Corporations	73.90	88.15	0.66	9.33	1.87
	Loss-making Corporations A: Income = 0	2.82	20.36	51.95	23.80	3.89
	Loss-making Corporations B: Income < 0	21.59	28.85	6.82	57.66	6.68
	Non-existent	1.70	35.57	2.24	62.19	

FY2016

		Next year				
		Profit	Loss		Non-existent	
			A	B		
	Share	72.86	3.53	20.49	3.11	
Current	Profit-making Corporations	74.13	88.76	0.68	8.37	2.19
	Loss-making Corporations A: Income = 0	2.69	17.15	53.72	25.40	3.72
	Loss-making Corporations B: Income < 0	21.48	28.37	7.28	57.89	6.47
	Non-existent	1.70	30.00	1.03	68.97	

FY2017

		Next year				
		Profit	Loss		Non-existent	
			A	B		
	Share	71.66	3.49	22.18	2.67	
Current	Profit-making Corporations	74.37	87.90	0.64	9.58	1.88
	Loss-making Corporations A: Income = 0	2.75	19.35	53.17	25.37	2.11
	Loss-making Corporations B: Income < 0	20.97	24.60	7.25	62.39	5.76
	Non-existent	1.91	31.78	1.40	66.82	

FY2018

		Next year				
		Profit	Loss		Non-existent	
			A	B		
	Share	69.61	3.09	24.25	3.05	
Current	Profit-making Corporations	73.14	86.66	0.40	10.80	2.14
	Loss-making Corporations A: Income = 0	2.59	17.79	50.18	27.76	4.27
	Loss-making Corporations B: Income < 0	22.49	23.45	6.52	63.92	6.11
	Non-existent	1.77	27.60	1.56	70.83	

FY2019

		Next year				
		Profit	Loss		Non-existent	
			A	B		
	Share	65.48	3.08	28.15	3.29	
Current	Profit-making Corporations	71.05	82.77	0.46	14.53	2.24
	Loss-making Corporations A: Income = 0	2.52	21.72	47.57	26.59	4.12
	Loss-making Corporations B: Income < 0	24.76	22.63	6.22	64.67	6.47
	Non-existent	1.68	30.90	0.84	68.26	

Note: Loss-making corporations A are those whose income before loss carryforward deduction is positive and income after deduction is zero. Loss-making corporations B are those whose income before loss carryforward deduction is negative.

Source: Authors' calculation

100 million yen reduced their capital. Did loss-making corporations reduce their capital in line with their business realities? Or did profit-making corporations reduce their capital in light of tax reforms, etc.? In this section we clarify this by looking at the inter-year transition probability from the current fiscal year to the next fiscal year as in the previous section.

Table 44 shows how the number of corporations has changed by capital size for all corporations. In the Table below, if the figure is exactly 100%, it is written as “100”, and if it is exactly 0%, it is written as “0”. “0.00” means that the figure is over 0%, but when rounded to two decimal places, it becomes 0.00%.

Given that the corporate tax system differs between corporations with capital of 100 million yen or less and corporations with capital of over 100 million yen, five possible states are considered here : capital of over 100 million yen, capital of 100 million yen, capital of 0 yen to less than 100 million yen, unknown, and non-existent. For example, for corporations that existed in FY2014, the transition probability of a corporation with capital of 0 yen to less than 100 million yen (“Capital less than 100 million yen” in Table 44) remaining in FY2015 with capital of 0 yen to less than 100 million yen is approximately 96.06%. This transition probability matrix shows that, with the exception of “unknown” and “non-existent,” the diagonal elements of the Table have high probabilities for all years. In other words, there is a high probability that the state of the corporation in the next fiscal year will remain unchanged from the current fiscal year.

Based on this, the transition probability of a corporation with capital of over 100 million yen in FY2014 becoming a corporation with capital of equal to or less than 100 million yen in FY2015 is calculated to be approximately 3.67 % ($= 1.57 + 2.10 + 0$). The number of corporations that fell into this category from FY2014 to FY2015 was 888. These are shown in the right-hand column of Table 44. Similarly, calculations were performed for other fiscal years, and Table 44 shows that the probability that a corporation with capital of over 100 million yen would fall to a corporation with capital of equal to or less than 100 million yen the next fiscal year ranged from just under 4% to just over 5% for each fiscal year during the analyzed period. In terms of the number of corporations, this ranges from just under 900 to just under 1,100. This is the result for all corporations.

What is the probability of this inter-year transition for profit-making corporations? Table 45 examines this. Table 45 shows that, if we limit the data to corporations that were profit-making in the current fiscal year, the transition probability for corporations with capital of over 100 million yen to have capital of equal to or less than 100 million yen in the next fiscal year was around 3% for each fiscal year, and the number of corporations was from 400 to just over 500 in our analyzed period. Table 46, on the other hand, looks at the same for loss-making corporations. Table 46 shows that, if we limit the data to corporations that were loss-making in the current fiscal year, the probability for corporations with capital of over 100 million yen to have capital of equal to or less than 100 million yen in the next fiscal year was approximately 6.0% in FY2014, fluctuating and gradually rising to approximately 10.8% in FY2019, and the number of corporations increased from just under 400 to just over 500.

Table 44. Transition Probability Matrix Across Capital Size

All corporations
FY2014 unit: %

Capital class	Share	Next year					> 100 mil to <= 100 mil
		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
> 100 mil	0.89	0.86	0.35	95.05	0.00	3.73	(888)
= 100 mil	0.34	0.80	94.47	0.60	0	4.13	
< 100 mil	94.15	0.02	0.01	96.06	0.00	3.91	
Unknown	0.00	0	0	100	0	0.00	
Non-existent	4.62	0.38	0.23	99.39	0		

FY2015

Capital class	Share	Next year					> 100 mil to <= 100 mil
		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
> 100 mil	0.86	0.85	0.38	98.28	0.00	0.49	(921)
= 100 mil	0.35	0.69	98.14	0.67	0	0.50	
< 100 mil	94.18	0.02	0.01	99.46	0.00	0.51	
Unknown	0.00	0	0	100	0	0.00	
Non-existent	4.61	0.33	0.23	99.45	0		

FY2016

Capital class	Share	Next year					> 100 mil to <= 100 mil
		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
> 100 mil	0.82	0.82	0.39	98.40	0.00	0.39	(891)
= 100 mil	0.37	0.62	98.33	0.69	0	0.36	
< 100 mil	94.25	0.02	0.01	99.56	0.00	0.41	
Unknown	0.00	0	0	100	0	0.00	
Non-existent	4.56	0.32	0.21	99.47	0		

FY2017

Capital class	Share	Next year					> 100 mil to <= 100 mil
		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
> 100 mil	0.79	0.79	0.41	98.46	0.00	0.35	(1078)
= 100 mil	0.38	0.71	98.12	0.90	0	0.27	
< 100 mil	94.45	0.02	0.01	99.60	0.00	0.36	
Unknown	0.00	0	0	100	0	0.00	
Non-existent	4.38	0.36	0.24	99.40	0		

FY2018

Capital class	Share	Next year					> 100 mil to <= 100 mil
		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
> 100 mil	0.76	0.76	0.42	98.50	0	0.32	(921)
= 100 mil	0.39	0.87	97.66	1.20	0	0.27	
< 100 mil	94.35	0.02	0.01	99.63	0	0.34	
Unknown	0.00	0	0	100	0	0.00	
Non-existent	4.50	0.31	0.22	99.47	0		

FY2019

Capital class	Share	Next year					> 100 mil to <= 100 mil
		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
> 100 mil	0.73	0.73	0.43	98.40	0.00	0.44	(1029)
= 100 mil	0.40	0.88	97.27	1.61	0	0.24	
< 100 mil	94.51	0.02	0.01	99.51	0.00	0.46	
Unknown	0	0	0	0	0	0	
Non-existent	4.35	0.30	0.21	99.49	0		

Note: Figures in the parenthesis represents the number of corporations

Source: Authors' calculation

Table 45. Transition Probability Matrix Across Capital Size: Loss-making Corporations

Profit-making corporations		Next year					unit: %
FY2014		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil
Capital class		Share					
Current	> 100 mil	1.96	94.53	1.31	1.53	0	2.85
	= 100 mil	0.57	0.61	96.30	0.40	0	(510)
	< 100 mil	92.40	0.02	0.01	98.52	0.00	
	Unknown	0.00	0	0	100	0	
	Non-existent	5.07	0.37	0.23	99.40	0	
FY2015		Next year					> 100 mil to <= 100 mil
Capital class		Share					
Current	> 100 mil	1.81	96.89	1.52	1.46	0	2.99
	= 100 mil	0.57	0.59	98.77	0.31	0	(514)
	< 100 mil	92.48	0.02	0.01	99.75	0.00	
	Unknown	0.00	0	0	100	0	
	Non-existent	5.14	0.29	0.18	99.53	0	
FY2016		Next year					> 100 mil to <= 100 mil
Capital class		Share					
Current	> 100 mil	1.68	97.18	1.37	1.35	0	2.72
	= 100 mil	0.58	0.38	99.02	0.38	0	(453)
	< 100 mil	92.71	0.02	0.01	99.76	0	
	Unknown	0.00	0	0	100	0	
	Non-existent	5.03	0.23	0.20	99.56	0	
FY2017		Next year					> 100 mil to <= 100 mil
Capital class		Share					
Current	> 100 mil	1.59	96.66	1.48	1.72	0	3.20
	= 100 mil	0.60	0.42	98.84	0.65	0	(522)
	< 100 mil	93.15	0.02	0.02	99.78	0.00	
	Unknown	0.00	0	0	0	0	
	Non-existent	4.66	0.28	0.20	99.52	0	
FY2018		Next year					> 100 mil to <= 100 mil
Capital class		Share					
Current	> 100 mil	1.48	97.19	1.35	1.30	0	2.65
	= 100 mil	0.61	0.40	98.44	1.02	0	(411)
	< 100 mil	93.13	0.02	0.02	99.79	0	
	Unknown	0.00	0	0	100	0	
	Non-existent	4.78	0.21	0.16	99.63	0	
FY2019		Next year					> 100 mil to <= 100 mil
Capital class		Share					
Current	> 100 mil	1.37	96.89	1.61	1.38	0.01	2.99
	= 100 mil	0.61	0.47	98.36	1.02	0	(441)
	< 100 mil	93.23	0.01	0.01	99.71	0.00	
	Unknown	0	0	0	0	0	
	Non-existent	4.80	0.21	0.16	99.63	0	

Note: Figures in the parenthesis represents the number of corporations

Source: Authors' calculation

Table 46. Transition Probability Matrix Across Capital Size: Loss-making Corporations

Loss-making corporations		Next year					unit: %
FY2014		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to ≤ 100 mil
Capital class		Share					
Current	> 100 mil	0.35	86.61	2.31	3.72	0	7.35
	= 100 mil	0.22	1.04	92.10	0.86	0	6.00
	< 100 mil	95.03	0.02	0.01	94.85	0	5.12
	Unknown	0.00	0	0	100	0	0
	Non-existent	4.39	0.39	0.23	99.38	0	6.03 (378)
FY2015		Next year					> 100 mil to ≤ 100 mil
Capital class		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
Share		0.33	0.25	98.77	0.00	0.65	7.45 (407)
Current	> 100 mil	0.32	91.71	3.13	4.32	0	0.84
	= 100 mil	0.23	0.82	97.27	1.16	0	0.75
	< 100 mil	95.13	0.02	0.01	99.30	0.00	0.68
	Unknown	0	0	0	0	0	0
	Non-existent	4.32	0.35	0.25	99.39	0	
FY2016		Next year					> 100 mil to ≤ 100 mil
Capital class		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
Share		0.33	0.26	98.91	0.00	0.50	8.35 (438)
Current	> 100 mil	0.31	90.94	3.16	5.19	0	0.71
	= 100 mil	0.24	0.96	97.35	1.11	0	0.57
	< 100 mil	95.16	0.02	0.01	99.45	0.00	0.52
	Unknown	0.00	0	0	100	0	0
	Non-existent	4.28	0.38	0.21	99.41	0	
FY2017		Next year					> 100 mil to ≤ 100 mil
Capital class		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
Share		0.31	0.27	98.98	0.00	0.45	11.00 (556)
Current	> 100 mil	0.30	88.32	3.84	7.16	0	0.67
	= 100 mil	0.24	1.13	97.04	1.28	0	0.54
	< 100 mil	95.26	0.02	0.01	99.50	0.00	0.47
	Unknown	0.00	0	0	100	0	0
	Non-existent	4.20	0.42	0.26	99.32	0	
FY2018		Next year					> 100 mil to ≤ 100 mil
Capital class		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
Share		0.32	0.28	98.98	0	0.42	9.92 (510)
Current	> 100 mil	0.31	89.54	4.18	5.74	0	0.54
	= 100 mil	0.25	1.58	96.49	1.46	0	0.47
	< 100 mil	95.12	0.02	0.01	99.53	0	0.44
	Unknown	0.00	0	0	100	0	0
	Non-existent	4.32	0.38	0.26	99.35	0	
FY2019		Next year					> 100 mil to ≤ 100 mil
Capital class		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	
Share		0.33	0.30	98.82	0.00	0.56	10.76 (588)
Current	> 100 mil	0.32	88.51	4.85	5.91	0	0.73
	= 100 mil	0.27	1.46	95.69	2.45	0	0.39
	< 100 mil	95.34	0.02	0.01	99.38	0.00	0.59
	Unknown	0	0	0	0	0	0
	Non-existent	4.06	0.36	0.25	99.39	0	

Note: Figures in the parenthesis represents the number of corporations

Source: Authors' calculation

Tables 44 to 46 show that during the analyzed period, the number of corporations with capital of over 100 million yen in the current fiscal year that fall to less than 100 million yen in the next fiscal year has been increasing year by year among loss-making corporations. In the most recent period, it was confirmed that more than 10% of loss-making corporations with capital of over 100 million yen reduced their capital to equal to or less than 100 million yen in the next fiscal year. In summary, the transition probability of a corporation with capital of over 100 million yen reducing its capital to equal to or less than 100 million yen in the next fiscal year is higher for loss-making corporations during this period. Meanwhile, while profit-making corporations that reduced their capital outnumbered until FY2016, loss-making corporations have been outnumbered since FY2017.

One of the motivations for capital reductions by corporations with capital over 100 million yen is often said to be to remove themselves from the target of size-based business taxation. Table 47 shows the probability of inter-year transitions, focusing only on size-based-

Table 47. Transition Probability Matrix Across Capital size: Size-based-taxed Corporations

Size-based-taxed corporations		Next year					unit: %	
FY2014		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil	
Capital class	Share							
Current	> 100 mil	98.50	92.43	1.81	2.24	0	3.52	4.05 (815)
Non-existent		1.50	100	0	0	0		
FY2015		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil	
Current	> 100 mil	98.57	95.26	2.14	2.31	0	0.29	4.46 (840)
Non-existent		1.43	100	0	0	0		
FY2016		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil	
Current	> 100 mil	98.62	95.30	2.04	2.40	0	0.26	4.44 (804)
Non-existent		1.38	100	0	0	0		
FY2017		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil	
Current	> 100 mil	98.36	94.09	2.34	3.33	0	0.24	5.67 (997)
Non-existent		1.64	100	0	0	0		
FY2018		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil	
Current	> 100 mil	98.61	94.84	2.32	2.62	0	0.22	4.94 (836)
Non-existent		1.39	100	0	0	0		
FY2019		> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	> 100 mil to <= 100 mil	
Current	> 100 mil	98.78	94.02	2.91	2.82	0.01	0.24	5.73 (945)
Non-existent		1.22	100	0	0	0		

Note: Figures in the parenthesis represents the number of corporations

Source: Authors' calculation

taxed corporations. Using a similar method, Table 47 shows that the transition probability of a size-based-taxed corporation having capital of equal to or less than 100 million yen in the next fiscal year was approximately 4.1% in FY2014, fluctuating and gradually increasing to approximately 5.7% in FY2019 during the period covered by this paper. Comparing this with Table 44, we can see that the majority of corporations with capital over 100 million yen in the current fiscal year that fall to equal to or less than 100 million yen in the next fiscal year are size-based-taxed corporations. As shown in Tables 45 and 46, corporations that reduce their capital in this way are often loss-making corporations. As shown in Table 6, even among corporations with capital over 100 million yen, nearly 30% are loss-making corporations, although the percentage is lower than for corporations with capital under 100 million yen.

Tables 44-46 also show the transition probability of corporations with capital of 100 million yen or less increasing their capital to over 100 million yen. Table 44 shows that for corporations with capital between 0 yen and 100 million yen in the current fiscal year, the transition probability to the same category in the next fiscal year is over 96% in every fiscal year, and over 99% since FY2015. We can confirm that the transition probability of increasing capital to over 100 million yen never exceeds 0.03%. This is also true for corporations with capital of 100 million yen. We can also confirm that this trend remains the same when we divide the data into profit-making corporations and loss-making corporations. Therefore, during the analyzed period, it was rare for corporations with capital of 100 million yen or less to increase their capital to over 100 million yen in the next fiscal year.

We have looked at the transitions between neighboring fiscal years from 2014 to 2019. Table 48 shows the transitions from the FY2014 state to the FY2020 state. The transition probability matrix shown in Table 48 was calculated by sequentially multiplying the transition probability matrices from the current fiscal year state to the next fiscal year state from FY2014 to FY2019 shown in Table 44 for five states: capital over 100 million yen, capital 100 million yen, capital between 0 yen and 100 million yen, unknown, and non-existent. As a result, the transition probability matrix in Table 48 represents the probability of transitioning from the FY2014 state to the FY2020 state. Therefore, in each transition probability matrix, the sum of the probabilities of all states up to FY2020 for each FY2014 state (summed

Table 48. Transition Probability Matrix Across Capital Size: FY2014-2020

unit: %

All corporations		FY2020					FY2019	FY2018	FY2017	FY2016	FY2015
Capital class	> 100 mil	= 100 mil	< 100 mil	Unknown	Non-existent	Non-existent	Non-existent	Non-existent	Non-existent	Non-existent	
FY2014											
> 100 mil	72.44	9.65	12.70	0.00	0.29	0.26	0.26	0.25	0.30	3.85	
= 100 mil	3.74	85.18	5.38	0.00	0.24	0.26	0.25	0.34	0.48	4.13	
< 100 mil	0.10	0.06	93.94	0.00	0.44	0.32	0.35	0.39	0.49	3.91	
Unknown	0.09	0.05	97.79	0.00	0.45	0.33	0.36	0.41	0.51	0	
New	0.40	0.30	97.24	0.00	0.45	0.33	0.36	0.41	0.51		
New in FY2015	0.35	0.28	97.81	0.00	0.46	0.34	0.36	0.41			
New in FY2016	0.34	0.25	98.26	0.00	0.46	0.34	0.36				
New in FY2017	0.37	0.27	98.57	0.00	0.46	0.34					
New in FY2018	0.32	0.23	98.99	0.00	0.46						
New in FY2019	0.30	0.21	99.49	0							

Source: Authors' calculation

row-wise) is 100%. Table 48 shows that, for example, the transition probability that a corporation with capital of over 100 million yen in FY2014 remains a corporation with capital of over 100 million yen in FY2020 is approximately 72.44%. In a Markov process-based understanding, the state of capital from FY2015 to FY2019 is irrelevant. In all transition probability matrices, the probabilities of the diagonal elements (excluding unknown and absent) are high. This means that the probability of remaining at the same capital size is high. The probabilities of the diagonal elements are higher for corporations with capital of less than 100 million yen than for corporations with capital of over 100 million yen.

Table 48 also suggests the survival rate for corporations that existed in FY2014 to exist through FY2020. The survival rate for corporations with capital of over 100 million yen in FY2014 (regardless of capital size) through FY2020 was approximately 94.8% (= 72.44 + 9.65 + 12.70 + 0.00). Similarly, the survival rate for corporations with capital of 100 million yen in FY2014 through FY2020 was 94.3%, and the survival rate for corporations with capital of less than 100 million yen through FY2020 was 94.1%. Considering that this analysis is based on the universe of corporate tax returns, this analysis shows that the survival rate for corporations with capital of over 100 million yen is slightly higher than that for corporations with capital of less than 100 million yen.

Table 48 also shows that among corporations newly established between FY2014 and 2019, approximately 0.4% will cease to exist each year. The majority of newly established corporations have capital of less than 100 million yen, with just over 0.3% becoming corporations with capital of over 100 million yen. This also shows that the transition probability does not necessarily increase with the number of years since establishment.

IX. Conclusion

We used tax records obtained from Appended Table 1(1) of the corporate tax return to analyze the loss-making corporations from FY2014 to FY2020. Although there are limits to what can be analyzed from Appended Table 1(1) of the corporate tax return alone, we were able to shed some light on the current status of loss-making corporations that are not published in the National Tax Agency Annual Statistics Report or the Corporation Sample Survey.

The results of this analysis, which uses data on all corporations available for this study (excluding corporations suspended or in liquidation, consolidated corporations, and foreign corporations), are summarized as follows: Based on the statistics of loss-making corporations, we present the number of loss-making corporations, and the distribution of loss amounts by loss amount bracket. This confirms that corporations appear to be bunching around zero loss amounts (income amounts). We also reveal that corporations resulting in zero loss amounts (income amounts) after applying loss carryforward deductions are more prevalent among corporations with capital of 100 million yen or less and less prevalent among corporations with capital of over 100 million yen. This is thought to be related to the fact that the loss carryforward deduction limit is set only for corporations with capital of

over 100 million yen. In other words, for corporations with capital of over 100 million yen, there is a limit on the loss carryforward deduction, so even if they have a carryforward loss (amount carried over to the next period), they cannot fully deduct their income before the loss carryforward deduction, and taxable income remains, but for corporations with capital of 100 million yen or less, there is no limit on deductions, so they can fully deduct their income before the loss carryforward deduction and reduce the loss amount (income amount) to zero.

Furthermore, we clarified the extent to which loss-making corporations and profit-making corporations have carried forward losses and the extent to which they have applied current-period deductions. It became clear that the distribution of loss-making corporations is influenced by the amount of loss carryforward deductions. By analyzing by capital class and industry, we were able to examine their characteristics.

Loss carryforwards are also affected by the business cycle. In particular, the period analyzed in this study overlapped with periods of economic recovery, with the exception of FY2020, and the results indirectly suggest that corporations that have used up their loss carryforwards turned from loss-making corporations to profit-making corporations.

The paper also provides a distribution of the number of corporations by the number of years they became loss-making corporations and the number of consecutive years they became loss-making corporations over the seven-year period from FY2014 to FY2020. The results show that corporations that became loss-making corporations for seven consecutive years accounted for approximately 36.5% of all corporations, with the proportion increasing with smaller capital. Becoming a loss-making corporation is not the same as applying a loss carryforward deduction. Only 1.1% of all corporations applied a loss carryforward deduction for seven consecutive years, while 21.2% of all corporations did not apply a loss carryforward deduction at all in seven consecutive years. This is because corporations that can apply a loss carryforward deduction for seven consecutive years must have a loss carryforward and have been profit-making for seven consecutive years. Such corporations are likely rare. Corporations that did not apply a loss carryforward deduction at all in seven consecutive years are likely to include corporations that became profit-making for seven consecutive years without a loss carryforward, or corporations that became loss-making for seven consecutive years without using a loss carryforward deduction.

Finally, we also examine the transition between profit-making and loss-making corporations between fiscal years (e.g., a corporation that is profit-making in the current fiscal year becomes loss-making in the next fiscal year). To compare the transition between fiscal years by capital size, we examine the transition between fiscal years for corporations with capital of over 100 million yen and those with capital of less than 100 million yen. During the analyzed period, the transition probability for corporations with capital of over 100 million yen that reduced their capital to 100 million yen or less in the next fiscal year ranged from just under 4% to just over 5%. On the other hand, the transition probability for corporations with capital of 100 million yen or less that increased their capital to more than 100 million yen in the next fiscal year was extremely low. The growth-oriented corporate tax reforms of the

mid-2010s, which increased the size-based enterprise tax rate, which does not apply to corporations with capital of 100 million yen or less, have led to a decline in the number of corporations with capital of over 100 million yen. While this paper does not analyze the causal relationship between this capital reduction trend and corporate tax reform, it analyzes the transition probability for corporations with capital of over 100 million yen that reduce their capital to 100 million yen or less in the next fiscal year, separating profit-making corporations from loss-making corporations. This revealed that loss-making corporations have a higher probability of reducing their capital to 100 million yen or less in the next fiscal year than profit-making corporations. Based on this, it appears that the majority of capital reductions were made by loss-making corporations in line with their business realities, rather than by profit-making corporations that reduced their capital due to changes in the tax system of the growth-oriented corporate tax reform implemented in the 2010s.

This paper also analyzed the corporate tax situation. We clarified the number of corporations by corporate tax amount bracket and the distribution of corporate tax amounts not only overall but also by capital bracket and industry. This revealed that corporations paying over 5 million yen in corporate tax account for approximately 95% of all corporate tax. We also found that the larger the capital size of a corporation, the higher the proportion of corporations paying over 5 million yen.

By clarifying not only the distribution of income amounts for profit-making corporations but also the distribution of losses for loss-making corporations, it is believed that it will be possible to provide a certain degree of foresight regarding trends in corporate tax amounts. In that sense, it is believed that clarifying the current status of loss-making corporations in this study is significant.

One future challenge is to conduct analyses using corporate data other than that contained in Appended Table 1(1) of the corporate tax return. The Corporation Sample Survey also uses information contained in tax returns other than Appended Table 1(1) to show the corporate tax situation, and it would be possible to analyze statistics combining these other tax statistics. In particular, the relationship between each corporation's financial situation and actual tax payment cannot be determined solely from Appended Table 1(1) of the corporate tax return. A further analysis could utilize micro data from the Policy Research Institute's "Corporate Enterprise Statistics" to merge them with the tax records by corporate names. These remain as future challenges.

References

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