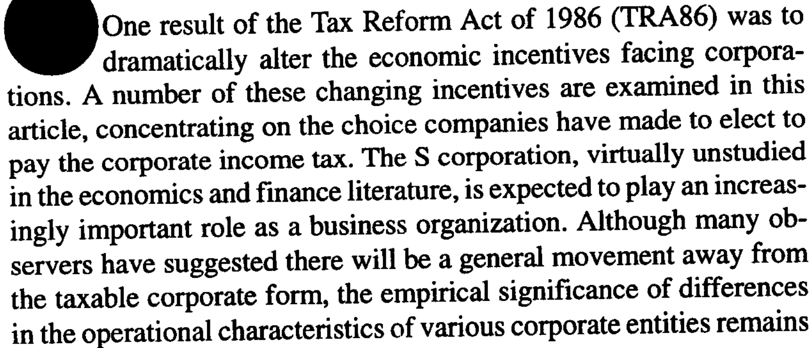
This article provides estimates of the effects of corporate taxation on the financial characteristics of firms. For a large number of corporations the corporate tax is voluntary, as they have the choice of operating as an S corporation—a pass-through entity similar to a partnership. Given that firms appear to volunteer to pay an additional tax, this article examines the behavior of firms to identify the relationship between their choice to be subject to the corporate tax and tax minimizing strategies. Analyzing firms with positive and negative income separately, the results suggest that the probability a firm has chosen to be taxable increases with firm size and with activity consistent with mitigating both the corporate and individual tax on corporate income. In addition, there is strong evidence that the additional administrative burden caused by a lack of conformity between state and federal tax treatment of S corporations provides a significant disincentive to the use of pass-through corporations.

CORPORATE TAXATION AND THE FINANCIAL CHARACTERISTICS OF FIRMS

GEORGE A. PLESKO
Northeastern University



One result of the Tax Reform Act of 1986 (TRA86) was to dramatically alter the economic incentives facing corporations. A number of these changing incentives are examined in this article, concentrating on the choice companies have made to elect to pay the corporate income tax. The S corporation, virtually unstudied in the economics and finance literature, is expected to play an increasingly important role as a business organization. Although many observers have suggested there will be a general movement away from the taxable corporate form, the empirical significance of differences in the operational characteristics of various corporate entities remains

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largely unknown. This article presents an initial attempt at determining the extent to which financial factors may have played a role in organizational choice and operations prior to TRA86.

A brief outline of the advantages of the corporation over other types of business forms, as well as their tax treatment, is presented in the next section. The historical significance of S corporations and their recent growth is reviewed in the third section. In the fourth section, the methodology used to examine corporate operations is described and estimation results are presented. The fifth section discusses changes brought about by the enactment of TRA86. Conclusions are summarized in the final section along with suggested areas of further work.

TYPES OF BUSINESS ORGANIZATIONS

CORPORATIONS VERSUS OTHER ENTITIES

Corporations have a number of advantages over other types of business organizations, namely sole proprietorships and partnerships.[1] Perhaps the most significant advantage of the corporate form is that owners are shielded from unlimited liability.[2] Generally, corporate shareholders are only at risk for losses of a business to the extent of their investment. In the case of claims on the business in excess of the business's value, a shareholder's personal assets will not be subject to any claims by the corporation's creditors. In a partnership, limited liability can be achieved only by giving up control over business operations. Control of a partnership rests in its general partner(s), who are subject to unlimited liability.[3] Sole proprietors are also subject to unlimited liability.

Second, corporate ownership is freely transferable between individuals.[4] This is not unique to the corporation, however, as sole proprietors and limited partners are generally free to transfer their interests in a business as well. General partners, however, may be subject to limitations on the disposition of their interest in the business, as agreed to in the original partnership agreement. Corporate ownership is much more easily divisible: A corporation can potentially have as many owners as there are outstanding shares of stock.

Finally, unlike other types of organizations, a corporation can have an unlimited life span. The life of a sole proprietorship will be directly linked to the life span of its owner. Although not unlimited, a partnership may be very long lived, depending on its structure. Otherwise, depending on the partnership agreement, the death or withdrawal of a partner could cause the termination of the business.

TAXATION OF CORPORATIONS

Regardless of whether an entity is formally incorporated, the Internal Revenue Code (IRC) requires it to be taxed as a corporation if it "more nearly resembles a corporation than a partnership or trust."[5] The IRC treats corporations as separate entities from their shareholders and as liable for a separate tax under subchapter C. Income earned by a corporation will be taxed first at the corporate level and again at the individual level when earnings are distributed. This *double-tax structure* has its own extensive literature and will not be discussed here (see, e.g., McLure 1979). Table 1 shows the tax rates applicable to corporate income before and after TRA86, along with the maximum individual rate. As with individual rates, the corporate tax has a graduated structure but has fewer brackets than the individual tax.

One way to escape this additional level of tax is to be classified as a *small business corporation*. This treatment was enacted into law in 1958 under subchapter S of the IRC and was expanded in 1982 (for an overview of the 1982 act, see Kenoe 1982). The key element to note is that subchapter S corporations possess the same nontax characteristics as any other corporation (such as limited liability) but for tax purposes are treated more closely to partnerships, a pass-through entity.[6] Therefore, for the most part, income will be subject to only one tax, at the individual level, rather than two.[7] Income from an S corporation is taxed as accrued to the shareholder (as in a partnership) rather than when received in the form of a dividend (as in a C corporation).

To be eligible for treatment as an S corporation the firm must meet the conditions of IRC §1361. First, an S corporation may have no more than 35 shareholders (with married couples counted as 1). Second, nonresident alien individuals and other corporations may not be

TABLE 1: Statistory Corporate Tax Rates[a] (in percentages)

Taxable Income	*1986*	*1988*
$0-$25,000	15	15
$25,001-$50,000	18	
$50,001-$75,000	39	25
$75,001-$100,000	40	34[b]
over $100,000	46[b]	
Maximum individual rate	50	28[c]

a. Transition rates for 1987 are omitted, as are the corporate and individual minimum tax.
b. An additional 5% corporate tax is applied to a certain range of taxable income in order to recapture the benefits of the graduated rate structure from large corporations. In effect, corporations above this income range pay a flat tax equal to the highest marginal rate. For 1986 and 1988 the ranges and maximum additional tax are:

	1986	*1988*
Taxable income	$1,000,000-$1,405,000	$100,000-$335,000
Maximum additional tax	$20,250	$11,750.

c. Some high-income individuals may have faced a 33% marginal rate on certain income as the benefits of the graduated rate structure were phased out for high-income taxpayers.

shareholders. Third, an S corporation cannot have more than one class of stock.[8] Finally, certain types of corporations are not eligible, such as members of affiliated groups, certain financial institutions, subchapter L insurance companies, possessions corporations, domestic international sales corporations (DISCs), or former DISCs.

TRADITIONAL USE OF S CORPORATIONS

Before the passage of the TRA86, the use of an S corporation for a new company would yield a number of advantages to its shareholders. First, given an expectation of losses in the early years of operation (because of the combination of low sales and depreciation deductions on early investment), these losses could be passed through to shareholders and used as deductions against other income. Were the firm not operating as an S corporation, these losses would remain in the

corporation and would be carried forward to offset corporate taxable income earned in some future period. This immediate use of losses yields a higher present value of tax savings. Second, corporate owners in the highest individual tax rate brackets (50%) may have faced a tax rate higher than the maximum corporate rate (46% for firms with more than $100,000 in taxable income). As a result, losses passed through to the owners could reduce a greater amount of tax liability at the individual level than they could at the corporate level, even absent present value considerations.

As the corporation earned positive income it would flow through to shareholders largely untaxed at the corporate level. However, given the potential to have the income taxed at a lower rate in a corporation, the owners could elect to terminate their S status and become a C corporation. As a C corporation, only income distributed to shareholders in the form of dividends would be subject to a double tax; retained earnings would be taxed only once, at the corporate level.[9] Thus the after-tax amount of income could be greater by electing to be taxed at the corporate level. As the corporation grows, the value of its stock would also rise as the corporation's assets increased. If a shareholder wanted income, it could be obtained through a sale of stock, which had the additional benefits of basis recovery (tax is paid only on the excess of the sale price of the stock over the purchase price) and a lower tax rate if it qualified as a long-term capital gain. The net effect of these transactions would be to reduce the impact of the double tax on corporate income.[10]

There are a number of additional ways to remove income from a C corporation without being subject to a double tax. Wages, salaries, and compensation paid to officers are all deductible expenses of a corporation, as are employee benefits. Were a corporation to pay out all of its earnings as employee expenses, only the individual tax would apply, assuming the expenses were included in the gross income of the employees.[11] Deductible expenses not included in an employee/shareholder's income would not be taxed at either level (such as health insurance and contributions to a retirement account) and would completely escape taxation.

Finally, although distributions, which are considered to be a return on equity, are not deductible by the corporation, payments of interest

are. If a corporation financed its growth through the use of debt, the return to creditors would be taxed only once, at the individual level. If the corporation's creditors were also its shareholders, interest payments could serve as a substitute for dividends and would only be taxed at the individual level.

HISTORICAL SIGNIFICANCE OF S CORPORATIONS

Subchapter S corporations have traditionally been a small fraction of all corporations.[12] Table 2 presents descriptive information about the relative importance of C and S corporations in the corporate sector for 1980 through 1989. Prior to 1986, S corporations accounted for less than 20% of all corporations, less than 2% of all corporate assets, and about 5% of corporate business receipts. These percentages had remained relatively constant since the 1970s. In the 6 months following the enactment of TRA86, nearly 400,000 corporations opted out of the taxable corporate sector and into subchapter S. In 1989 (the most recent year for which data are available) S corporations accounted for more than 39% of corporations, 4% of assets, and 13% of business receipts. This growth is most likely attributable to three factors. First is the Subchapter S Revision Act of 1982, which made the tax treatment of S corporations more similar to partnerships. Second is the Economic Recovery Tax Act of 1981, which lowered the maximum individual tax rate on unearned income from 70% to 50% and reduced the incentive to shelter income in a C corporation. Finally, the sharp gain in 1987 was caused by the change in incentives brought about by TRA86 and will be discussed in section 5.

Table 3 presents the 1982 distribution of S corporations and their assets by the number of shareholders on record.[13] More than 90% of S corporations had 4 or fewer shareholders and less than 1% had more than 10. The distribution of assets was also skewed toward corporations with few shareholders, although not as severely as the number of returns. Slightly more than half (53.4%) of the value of assets were held by S corporations with only 1 or 2 shareholders.

The question still remains, however, of the extent to which tax factors may have encouraged corporations to elect subchapter S versus

C treatment, and how the choice of tax status affects the operations of the firm.[14] This is addressed in the next section.

EFFECTS OF CORPORATE TAX CHOICE

METHODOLOGY

Available data on S and C corporations is not completely suitable to analyze the decision of firms to elect one type of organizational form or the other. To analyze the decision of choice would require access to detailed information about the firms at the time the choice decision was being considered and would need to include the expectations of the managers about the future of the firm and the ways in which it would be operated under each. Because this type of data is unavailable, we choose the best available option and use the financial information of firms as soon as possible after the decision has been made.

This analysis takes as given the decision to incorporate and analyzes the differences in operating characteristics of firms which chose to be subject to the corporate tax (C corporations) versus those which did not (S corporations). It is important to note that the values of the independent variables used in this analysis cannot be considered strictly exogenous. Because the available data are of firms which have already elected one tax status or the other, the levels of the variables will have been influenced by that choice. For example, because the regulations governing S corporations impose certain restrictions on their capital structure, their observed capital structure will have been influenced by the choice of one organizational form over another. Our objective, however, is not to predict what choice a firm would make given a set of characteristics, but rather is to determine if certain operating characteristics are related to the type of organization chose for tax purposes. This is similar to the use of a discriminant model, which estimates the ability of a set of explanatory variables to classify observations into two groups.[15] In our case, we are trying to determine the operating characteristics associated with a particular form of organization. The results discussed in the next section identify the

TABLE 2: Selected U.S. Income Tax Statistics for Corporations: 1978-1989 (dollar amounts in millions)

	1978	*1979*	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*
All corporations												
Net income	274,520	321,650	296,787	301,441	274,353	296,932	349,179	363,687	408,861	465,235	555,851	556,332
Number of returns	1,523,648	1,586,485	1,596,632	1,597,298	1,608,357	1,676,288	1,777,770	1,820,120	1,907,738	1,995,452	1,908,799	1,921,805
Deficit	–27,652	–37,034	–191,645	–87,792	–120,019	–108,618	–116,279	–123,568	–139,331	–137,011	–142,868	–167,322
Number of returns	853,131	970,309	1,113,906	1,215,122	1,317,576	1,322,783	1,392,973	1,457,099	1,520,777	1,616,681	1,653,990	1,706,058
Total	246,867	284,616	105,142	213,649	154,334	188,314	232,901	240,119	269,530	328,224	412,983	389,011
Number of returns	2,376,779	2,556,794	2,710,538	2,812,420	2,925,933	2,999,071	3,170,743	3,277,219	3,428,515	3,612,133	3,562,789	3,627,863
Total assets	6,014,452	6,835,057	7,617,238	8,547,162	9,357,785	10,201,084	11,106,702	12,773,094	14,163,210	15,310,616	16,568,468	17,647,120
Total receipts	4,714,603	5,598,689	6,361,284	7,026,352	7,024,098	7,135,494	7,860,711	8,398,278	8,669,379	9,580,721	10,264,867	10,934,973
Total deductions	4,467,197	5,315,726	6,125,365	6,813,841	6,869,267	6,945,457	7,628,772	8,158,144	8,394,933	9,243,904	9,853,420	10,544,706
Interest paid	192,403	261,277	344,613	476,965	515,033	475,060	535,819	568,645	572,974	589,989	672,448	831,521
C corporations												
Net income	265,926	313,059	288,702	292,987	263,361	282,357	330,473	342,528	384,918	420,241	497,738	492,998
Number of returns	1,246,328	1,303,842	1,315,040	1,331,832	1,347,799	1,371,249	1,445,403	1,477,782	1,511,361	1,421,869	1,275,536	1,202,815
Deficit	–24,407	–32,238	–186,078	–81,209	–112,075	–99,119	–104,479	–110,011	–123,681	–116,168	–118,158	–136,457
Number of returns	651,772	738,045	850,109	939,099	1,013,915	979,555	1,024,001	1,077,331	1,090,940	1,062,359	1,030,062	1,002,081
Total	241,519	280,820	102,624	211,778	151,286	183,238	225,994	232,517	261,237	304,072	379,579	356,541
Number of returns	1,898,100	2,041,887	2,165,149	2,270,931	2,361,714	2,350,804	2,469,404	2,555,113	2,602,301	2,484,228	2,305,598	2,204,896
Total assets	5,935,004	6,749,279	7,529,825	8,455,990	9,247,272	10,058,873	10,926,529	12,565,159	13,912,234	14,866,892	15,983,935	16,959,726
Total receipts	4,520,378	5,385,983	6,150,962	6,813,838	6,781,041	6,835,246	7,475,684	7,967,637	8,185,392	8,608,474	9,000,879	9,471,007
Total deductions	4,278,329	5,106,822	5,917,569	6,603,213	6,629,278	6,650,291	7,250,652	7,735,255	7,919,616	8,295,865	8,622,969	9,113,288
Interest paid	189,913	257,976	340,689	472,287	509,821	469,657	528,497	560,552	564,215	576,917	655,168	808,589

S corporations												
Net income	8,594	8,591	8,085	8,454	10,992	14,575	18,706	21,160	23,943	44,994	58,113	63,335
Number of returns	277,320	282,643	281,592	265,466	260,558	305,039	332,367	342,338	396,377	573,583	633,263	718,990
Deficit	−3,245	−4,796	−5,567	−6,583	−7,944	−9,499	−11,800	−13,558	−15,649	−20,843	−24,710	−30,865
Number of returns	201,359	232,264	263,797	276,023	303,661	343,228	368,972	379,768	429,837	554,322	623,928	703,977
Total	5,349	3,796	2,519	1,871	3,048	5,076	6,907	7,602	8,293	24,152	33,403	32,470
Number of returns	478,679	514,907	545,389	541,489	564,219	648,267	701,339	722,106	826,214	1,127,905	1,257,191	1,422,967
Total assets	79,448	85,778	87,413	91,172	110,513	142,212	180,173	207,935	250,976	443,723	584,533	687,394
Total receipts	194,224	212,706	210,322	212,514	243,057	300,248	385,027	430,642	483,986	972,246	1,263,988	1,463,966
Total deductions	188,868	208,904	207,796	210,628	239,990	295,166	378,120	422,889	475,317	948,039	1,230,451	1,431,418
Interest paid	2,491	3,301	3,924	4,678	5,212	5,403	7,322	8,094	8,759	13,072	17,279	22,933
S corporation share												
Net income	0.0313	0.0267	0.0272	0.0280	0.0401	0.0491	0.0536	0.0582	0.0586	0.0967	0.1045	0.1138
Share of returns	0.1820	0.1782	0.1764	0.1662	0.1620	0.1820	0.1870	0.1881	0.2078	0.2874	0.3318	0.3741
Deficit	0.1174	0.1295	0.0290	0.0750	0.0662	0.0875	0.1015	0.1097	0.1123	0.1521	0.1730	0.1845
Share of returns	0.2360	0.2394	0.2368	0.2272	0.2305	0.2595	0.2649	0.2606	0.2826	0.3429	0.3772	0.4126
Total	0.0217	0.0133	0.0240	0.0088	0.0197	0.0270	0.0297	0.0317	0.0308	0.0736	0.0809	0.0835
Share of returns	0.2014	0.2014	0.2012	0.1925	0.1928	0.2162	0.2212	0.2203	0.2410	0.3123	0.3529	0.3922
Total assets	0.0132	0.0125	0.0115	0.0107	0.0118	0.0139	0.0162	0.0163	0.0177	0.0290	0.0353	0.0390
Total receipts	0.0412	0.0380	0.0331	0.0302	0.0346	0.0421	0.0490	0.0513	0.0558	0.1015	0.1231	0.1339
Total deductions	0.0423	0.0393	0.0339	0.0309	0.0349	0.0425	0.0496	0.0518	0.0566	0.1026	0.1249	0.1357
Interest paid	0.0129	0.0126	0.0114	0.0098	0.0101	0.0114	0.0137	0.0142	0.0153	0.0222	0.0257	0.0276

SOURCE: Internal Revenue Service, Statistics of Income, Corporation Income Tax Returns (Publication 16), selected years.

TABLE 3: S Corporation Returns and Assets, 1982

Number of Shareholders	Number of Returns	Share	Total Assets ($)	Share
1	234,425	0.4155	30,163,923,000	0.2729
2	185,786	0.3293	28,839,616,000	0.2610
3	63,980	0.1134	17,570,792,000	0.1590
4	36,840	0.0653	10,856,619,000	0.0982
5	15,477	0.0274	6,206,012,000	0.0562
6	8,477	0.0150	4,311,552,000	0.0390
7	6,102	0.0107	3,035,928,000	0.0275
8	3,309	0.0059	2,366,509,000	0.0214
9	2,907	0.0052	1,665,166,000	0.0151
10	2,558	0.0045	1,721,717,000	0.0156
Greater than 10	4,448	0.0079	3,775,054,000	0.0342
Totals	564,219		110,512,889,000	

SOURCE: Author's calculations from Corporation SourceBook file.

operating characteristics of firms which help to distinguish the type of organization chosen. The significance of each characteristic will be discussed in turn in the Results section.

Records were drawn from the 1984 Statistics of Income corporation file, consisting of approximately 90,000 corporate tax returns (form 1120 series).[16] Only *new corporations*, those which had been incorporated in the previous year, were extracted, yielding a total of 4,844 records. From this sample any corporation which did not appear potentially eligible to elect S corporation status was removed. Returns were excluded if they showed the corporation to be a part of a controlled group or if they had a foreign owner. Because of their different tax rules and financial characteristics, insurance companies (Form 1120L and 1120M) were also excluded. The final sample contains 3,120 corporations: 2,169 C corporations and 951 S corporations.[17] The only eligibility requirement which could not be directly checked was the number of shareholders, because this information was not requested on the 1984 tax forms. Although this is an important variable, Table 3 has already shown that the number of shareholders is rarely a limiting factor. To the extent a C corporation did have more than 35 shareholders, it probably had a more complex capital structure as well and would have been eliminated from the sample for other

TABLE 4: Summary Statistics for the Sample (dollar amounts in thousands)

	S Corporations		*C Corporations*	
	Mean	SD	*Mean*	SD
Number of firms	951		2169	
Total assets (balance sheet)	2,401.5	8,625	13,282.1	80,413
Gross receipts	2,055.0	12,579	4,563.5	46,045
Debt	893.8	5,340	2,392.7	44,935
Retained earnings	10.2	633	–111.1	7,387
Loans from stockholders	171.4	665	64.4	713
Loans to stockholders	17.9	193	78.0	1,772
Other investments	91.1	2,382	4,096.8	45,616
Total deductions	798.9	3,112	1,621.6	10,219
Interest paid	105.9	461	323.1	3,425
Depreciation	85.7	416	141.8	1,211
Officers compensation	50.6	632	65.4	176
Wages and salaries	149.0	970	246.2	2,072
Employee benefits	9.0	103	38.9	395

reasons. For those not eliminated, it is possible that other explanatory variables may serve as a proxy for firms with a larger number of shareholders. Table 4 provides descriptive information of the data for both sets of corporations.

The first line of Table 4 shows the average C corporation had more than 5 times the assets of the average S corporation ($13.3 million vs. $2.4 million), but only slightly more than twice the amount of gross receipts ($4.6 million vs. $2.1 million). Although C corporations have, on average, much more debt ($2.4 million vs. $0.9 million), S corporations are much more leveraged (an average debt to asset ratio of .37 vs. .18). The debt of S corporations was more concentrated in loans from their shareholders (19% of their total debt vs. less than 3% for C corporations). Although the average amount of interest paid was three times greater for C corporations than S corporations, when examined as a percentage of total deductions or total receipts, these amounts are much closer (13.3% vs. 19.9% of total deductions and 5.2% vs. 7.0% of gross receipts for S and C corporations, respectively).

Although absolute firm size is likely to be an important element in the choice of an organizational structure, to examine the various financial effects the variables are expressed as a percentage of assets or total deductions. The sample was further split into two subsamples:

corporations with positive taxable income (gain corporations) and those with negative taxable income.[18]

ESTIMATION RESULTS

Gain Corporations

The parameters from the maximum likelihood estimation for gain corporations, along with their standard errors, are presented in Table 5. The third column shows the calculated effect of each variable on the marginal probability a given corporation will have chosen to be a taxable (C) corporation. With the exception of the industry variables these are calculated at the mean for each variable. For the industry variables, the sample mean used excluded the other industry variables. This yields a clearer estimate of the effect of industry on a firm's marginal probability of being a C corporation.

The first three variables after the intercept are measures of the size of each company in the sample. Total assets employed is a separate measure of company asset size which nets out offsetting balance sheet entries and provides an estimate of the actual value of assets used in the production of goods and services.[19] Of the three, only the coefficient for total assets as reported on the balance sheet is significant. The magnitude of the coefficient and its related marginal probability suggest a very small increase in the probability the corporation will be a C corporation for each additional thousand dollars in assets. This result is not surprising because larger corporations tend to have a more complicated corporate and capital structure which may not be permitted for S corporations. It is possible these variables are a proxy for the difficulty in meeting either the 35-shareholder limitation under subchapter S or its more restrictive capital structure requirements.

The next six coefficients concern the use of funds and the capital structure shown on the firm's balance sheet. Other investments from the corporation's balance sheet are the total of investment in government securities, mortgages, and a category labeled *other investments.* These investments would be considered tax disadvantaged at the corporate level because they could easily be held by individuals, and their earnings will be taxed twice if held by a C corporation and their

TABLE 5: Coefficient Estimates for Gain Corporations

	Coefficient	*Standard Error*	*Marginal Probability*
Constant	0.6867313	0.1638252***	0.2059096
Total assets (balance sheet)	0.0000257	0.0000073***	0.0000077
Total assets employed	0.0000098	0.0000387	0.0000030
Gross receipts	–0.0000016	0.0000012	–0.0000005
Interest paid	–0.0001300	0.0001252	–0.0000390
Other investments/total assets	–0.0036671	0.0019179*	–0.0010996
Retained earnings	–0.0000294	0.0000124**	–0.0000088
Retained earnings/total assets	0.0009741	0.0007698	0.0002921
Debt/assets (balance sheet)	–0.3757417	0.1139718***	–0.1126625
Depreciation/total deductions	–0.0043030	0.0031930	–0.0012902
Loans from stockholders/total	–0.0028084	0.0012370**	–0.0008421
Loans to stockholders/total	0.0021924	0.0011220*	0.0006574
Officers compensation/total deductions	0.0148954	0.0028783***	0.0044662
Wages and salaries/total deductions	0.0032605	0.0027417	0.0009776
Employee benefits/total deductions	0.0042643	0.0059287	0.0012786
State	0.1875519	0.0863915**	0.0562356
Agriculture	–0.1483945	0.2471886	–0.0491897
Mining	–0.3232902	0.3368116	–0.1071639
Construction	–0.3248010	0.1815614*	–0.1076647
Transportation and utilities	–0.2159193	0.2492649	–0.0715727
Wholesale	0.1999831	0.1876559	0.0662902
Retail	–0.1316732	0.1614034	–0.0436469
Finance, insurance, and real estate	–0.0964638	0.1684711	–0.0319757
Services	–0.3527288	0.1593321**	–0.1169222
Not allocable	–1.7404710	0.5322340***	–0.5769297
Taxable income < $50,000	0.1507105	0.0885644*	0.0451891
Number of observations	1,390		
Degrees of freedom	1,364		
Number of observations event = 1	1,076	(C corporation)	
Number of observations event = 0	314	(S corporation)	
Log of the likelihood function	–668.626		

*Significant at the 10% level; **significant at the 5% level; ***significant at the 1% level.

earnings distributed. Consistent with expectations, the variable for share of assets in other investments shows a statistically significant and negative influence on the probability of being a C corporation. A 1% increase in the share of assets in other investments decreases the probability of the firm having chosen to be a taxable corporation by approximately .11%.

The coefficients on measures of retained earnings, the amount of accumulated earnings not distributed to shareholders, suggest a greater probability of an S election given higher levels of retained income, even though this income is taxed at the shareholder level whether it is distributed or not. This may be due to an increased need for internal financing by S corporations caused by a lack of access to financial markets. Retained earnings are reduced by distributions to shareholders or by other payments made by corporations.

The coefficient for the debt-to-asset ratio is negative and highly significant. This suggests greater leverage is associated with an increased probability the firm is an S corporation. The coefficient estimate implies that a 1% increase in the debt-to-asset ratio is associated with a .1% decrease in the probability of being a C corporation.

Both loans to and from stockholders as a share of total lending/debt are statistically significant. The results imply a reduction in the marginal probability that the firm will be a C corporation the greater its outstanding debt to shareholders. Although this is counterintuitive because debt is a tax-preferred expense that would allow shareholders to remove income from the corporate level without the corporate level tax, it is consistent with the greater ease of structuring loans from shareholders in S corporations. In addition, levered C corporations with substantial shareholder-owned debt may be subject to increased IRS scrutiny. This result is also consistent with the earlier results for retained earnings as these smaller corporations may be more dependent on shareholder financing.

Loans to stockholders are both significant and of the expected sign, implying greater corporate lending to shareholders by C corporations. Although information about the structure of such loans are not available, loans to shareholders could be on favorable terms, or a form of compensation, and could be used to minimize the effects of the double tax. The estimated effects of loans to and from shareholders are each less than .1% for each percentage point increase in their share of total loans.

The next three variables measure the influence of employee compensation. Only the first is significant, implying C corporations pay out a higher percentage of their earnings as deductible compensation to their officers. This is consistent with the expectation that taxable

firms use compensation as a means of distributing corporate income without paying the corporate tax, especially because the officers of smaller companies are likely to be substantial shareholders. The estimated effect is relatively large with a .4% increase in the firm having chosen to be a C corporation for each additional percentage of deductions devoted to compensation.

The final set of coefficients are the nonfinancial characteristics of each firm in the sample. State is a dummy variable equal to 1 if the corporation resides in a state which did not conform to the federal tax treatment of S corporations, that is, states which would have levied the same state corporate tax on an S corporation as it would a C corporation.[20] An absence of conformity to federal law may impose a significant recordkeeping burden on S corporations which may negate the tax preference[21] and would be expected to decrease the probability a firm would have chosen to be an S corporation. The coefficient estimate is both of the expected sign and significant, suggesting that state tax laws influence the tax choices made at the federal level. For a given set of financial characteristics, the marginal probability of being a C corporation is 5.6% higher in states that did not conform to the federal tax treatment.

The next nine variables are dummy variables equal to 1 if the corporation was classified as being in the listed industry. Because the variable for manufacturing firms was excluded from the estimation, these coefficient estimates represent the change if the firm is not in manufacturing. With the exception of wholesale trade, all other industries had a lower probability of being a C corporation than firms in manufacturing.

The last variable is equal to 1 if the corporation had taxable income less than $50,000. Nearly 60% of the gain corporations fell into this category. For these corporations, the combination of reduced corporate rates (due to the graduated rate structure) and the individual capital gains rate was less than the ordinary individual rate even without the benefit of deferral. Consistent with tax-minimizing behavior, the estimate is both positive and significant, suggesting the tax structure makes C corporations preferable to an immediate pass through of income. Taxable income of less than $50,000 was associated with a 4.5% increase in the probability of being a C corporation.

Loss Corporations

The estimates for loss corporations are presented in Table 6, and generally follow those of the gain corporations. One important characteristic of the loss corporations is that S corporations comprised a much higher percentage of the sample than gain corporations, consistent with the description presented in the Traditional Use of S Corporations section. S corporations made up 36.8% of loss corporations sampled, compared to 22.6% of gain corporations.

Of the size variables, a greater level of total assets as reported on the balance sheet was associated with a small increase in the probability a corporation would have chosen to be a C corporation, similar to the results for gain corporations. However, unlike the estimates for gain corporations, gross receipts is also significant, but of the opposite sign.

Of the financial variables, only retained earnings and depreciation deductions are significant. However, the negative effect of retained earnings on the probability of the corporation having chosen to be subject to the corporate tax was estimated to be nearly double that reported for gain corporations. This is not surprising as it implies an even greater need for internal financing among loss corporations. Greater depreciation deductions as a share of total deductions also reduce the probability that a firm will be a C corporation. This is consistent with the traditional life cycle of a corporation presented earlier in which a pass-through entity is chosen in the early years so that losses can be deducted by the owners against their ordinary income.

The estimates of the coefficients for loans to and from stockholders are both significant. A 1% increase in the amount of loans from stockholders decreased the probability that the corporation will have chosen to be subject to the corporate tax .15%, nearly double the result found for gain corporations. The effect of loans to stockholders is positive, as expected, although small. Funds lent to individuals are not included in their taxable income, and the interest charged by the corporation was generally deductible at the personal level.

Two of the three measures of officer and employee compensation are significant. As with gain corporations, a greater share of deductible

TABLE 6: Coefficient Estimates for Loss Corporations

	Coefficient	*Standard Error*	*Marginal Probability*
Constant	0.4792232	0.1222073***	0.1439120
Total assets (balance sheet)	0.0000141	0.0000051***	0.0000042
Total assets employed	0.0000053	0.0000242	0.0000016
Gross receipts	–0.0000059	0.0000020***	–0.0000018
Interest paid	0.0000122	0.0000741	0.0000037
Other investments/total assets	0.0003291	0.0016249	0.0000988
Retained earnings	–0.0000415	0.0000232*	–0.0000125
Retained earnings/total assets	0.0000013	0.0000017	0.0000004
Debt/assets (balance sheet)	–0.0017703	0.0022453	–0.0005316
Depreciation/total deductions	–0.0019241	0.0008888**	–0.0005778
Loans from stockholders/total	–0.0050630	0.0009103***	–0.0015204
Loans to stockholders/total	0.0020572	0.0010714*	0.0006178
Officers compensation/total deductions	0.0097556	0.0027070***	0.0029296
Wages and salaries/total deductions	0.0015839	0.0022311	0.0004756
Employee benefits/total deductions	0.0691210	0.0191083***	0.0207572
State	0.1750572	0.0706164**	0.0525702
Agriculture	–0.3140735	0.2004395	–0.0750586
Mining	–0.1514818	0.2485995	–0.0362017
Construction	–0.1183728	0.1545564	–0.0282892
Transportation and utilities	–0.4643367	0.1879830**	–0.1109691
Wholesale	0.0615888	0.1670315	0.0147188
Retail	–0.2772160	0.1349006**	–0.0662502
Finance, insurance, and real estate	–0.2479337	0.1310947*	0.0592522
Services	–0.5100115	0.1271614***	–0.1218847
Not allocable	–0.2371926	0.2912895	–0.0566853
Number of observations	1,730		
Degrees of freedom	1,705		
Number of observations event = 1	1,093	(C corporation)	
Number of observations event = 0	637	(S corporation)	
Log of the likelihood function	–1,043.680		

*Significant at the 10% level; **significant at the 5% level; ***significant at the 1% level.

expenses devoted to officer's compensation is estimated to have increased the probability the firm will have elected C status although the effect is not as large: .3% versus .4%. In addition, for loss companies, increased employee benefits substantially increases the likelihood of a C election, nearly 3% for each additional percentage of deductions devoted to officer's compensation.

For loss corporations the effect of state tax treatment of S corporations is estimated to have a similar disincentive effect on the use of S corporations as it did with gain corporations. The probability that the firm would have chosen to be an S corporation is reduced by slightly more than 5%.

The remaining variables show the effect of industry on the tax choice of the firm. As with gain corporations, all industries except wholesale and retail trade had a lower probability of being a C corporation than manufacturing.

In general, the results from the two sets of estimates support the hypothesis that the financial structure of a firm is influenced by the tax status chosen and quantify the extent to which tax factors influence corporate operations. The results show that the ways in which corporations finance their operations and distribute income are consistent with a rational use of corporate structure to minimize the effect of corporate and individual income taxes.

S CORPORATIONS AFTER THE TAX REFORM ACT OF 1986

TRA86 dramatically changed the incentives of using a corporation to defer the recognition of taxable income. By setting the maximum corporate rate higher than the maximum individual rate, the incentive to leave income inside the corporation has been greatly reduced. In addition, the elimination of preferential treatment for long-term capital gains ensures that income will be taxed at the same rate regardless of when it is recognized, even though the benefit of deferral remains. Although under a number of circumstances an S election is either not permissible or otherwise not advantageous (see Sharp 1987 for examples), for a new or existing eligible small business the incentive to remain or elect C status is greatly reduced.

One of the factors leading to an increase in S corporations following the enactment of TRA86 was due to the repeal of the "General Utilities" doctrine. Effective January 1, 1987, a C corporation could no longer liquidate its operations (e.g., in an acquisition) and distribute the realized value of its assets to its shareholders without first paying a corporate tax on the proceeds. In addition, C-to-S conversions made

prior to 1987 could escape the built-in gains tax, which requires the payment of a corporate-level tax on capital gains income derived from the sale of former C corporation assets if recognized within 10 years. Electing S treatment, although not necessarily exempting liquidation from the corporate tax, could greatly reduce its cost.[22]

In the months around and after the enactment of TRA86, interest in S corporations increased dramatically. To qualify as an S corporation, Form 2553, an application, must be filed with and approved by the IRS. The number of Form 2553 filings gives some indication of the interest in this form of entity. Figure 1 shows the number of applications received in each semiannual period since January 1983. The sharp increase in the first half of 1987 was most likely due to a large number of C corporations eligible for S treatment who found themselves in tax-disadvantaged circumstances after TRA86. Because this data reflects the processing of applications rather than the date of their receipt by the IRS, the sharp increase in the first half of 1987 includes applications filed at the end of 1986.

The possibility still remains, although greatly reduced, of continuing to use corporations to reduce tax liability. The first $50,000 of corporate income is taxed at a rate as low or lower than under pre-1986 law. In addition, corporations continue to receive a partial deduction for certain dividends received, reducing the effective tax rate on income from stock holdings.

Although a mass exodus from the taxable corporate sector is unlikely given the restrictions placed on S corporations, recent tax changes dramatically alter the incentives facing new corporations, as well as corporations previously established as a mechanism to defer income. What can be expected is that eligible corporations paying the corporate tax to postpone or avoid the individual tax will seek to escape from the corporate tax system. As corporations shift, taxable income will be transferred from the corporate sector to the incomes of individuals. The full magnitude of this shift and its consequences for corporate tax receipts is still unknown. Recent Senate hearings have addressed the concern that corporate revenues have not increased as much as expected after Tax Reform and have suggested that the conversion from C to S corporations may be responsible for part of the shortfall (see Plesko 1990; Reischauer 1990; Rosen 1990). Table 2

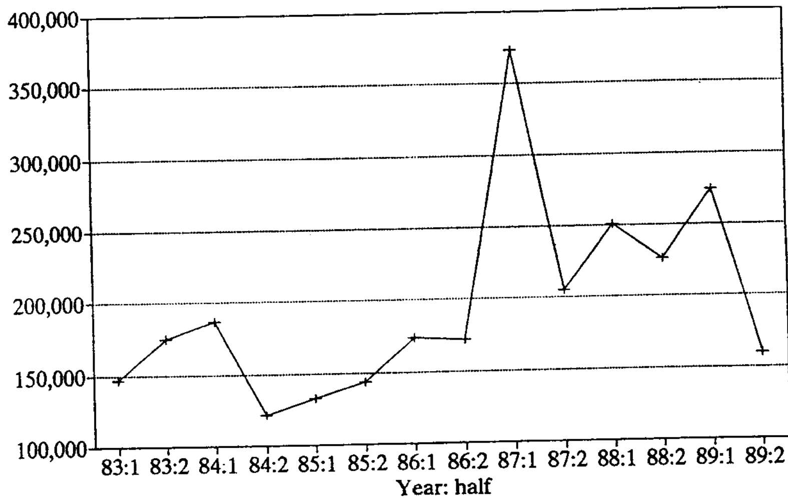

Figure 1. Form 2553 Filings, 1983-1989
SOURCE: Internal Revenue Service, unpublished data.

shows that the income of S corporations with positive income jumped from $23.9 in 1986 to $63.3 billion in 1989, with total income increasing from $8.3 to $32.5 billion. Between 1986 and 1987, S corporations more than doubled their share of total corporate income.[23]

CONCLUSIONS

The results of this article provide evidence that individuals have used both C and S corporations in ways consistent with minimizing their exposure to taxes and has presented estimates of the importance of various tax factors in organizational choice—providing support for the significance of tax considerations in corporate planning. The results suggest that corporations operate under their chosen organizational structure to take advantage of tax options and pursue strategies to minimize the effect of the corporate tax. More importantly, the results also suggest that state tax treatment of S corporations plays a

large and significant role in determining the tax status chosen by corporations.

The tax factors facing corporations have undergone significant changes as a result of TRA86. Numerous tax incentives that have existed for a number of years have either been severely curtailed or completely reversed. These changes have led and will continue to lead many corporations to rethink the organizational structure they have chosen for tax purposes, possibly causing many to elect out of the corporate tax system. One result that should occur is that the use of C corporations as a tool of tax avoidance will be reduced.

These results provide a baseline for analyzing the post-TRA86 behavior of corporations and trends which may become evident as data become available. It is hoped that this article will create a greater interest among economists in the new role of S corporations in the post-Tax-Reform world.

NOTES

1. Partnerships can be further delineated into limited partnerships and master limited partnerships (MLPs). A more complete summary of business entities can be found in Solomon, Lurie, and Boutwell (1986).

2. A limited partner (as opposed to the general partner(s)) can obtain limited liability. The corporate characteristics of MLPs led Congress, in 1987, to have certain MLPs taxed as if they were corporations. For an explanation of these provisions see U.S. Congress (1987, 1063-79).

3. This may be mitigated by having a corporation act as the general partner, or each member of the partnership be a corporation, and each partner be the sole stockholder of that corporation.

4. In closely held corporations, the free transferability of ownership may be limited by agreement of the shareholders or by a lack of markets for the shares.

5. See IRC §7701 and its regulations, §301.7701-2.

6. The exceptions are outlined in IRC §1363(b).

7. S corporations may be liable for investment credit recapture, tax on excess net passive investment income, capital gains, and built-in gains.

8. IRC §1361(c)(5) provides a safe harbor such that straight debt shall not be treated as a second class of stock. In October 1990 the IRS issued proposed regulations (PS-4-73) dealing with the one class of stock rule. Hearings on the proposed regulations were held in February of 1991. See IRS (1990), "One class" (1990), and Evans (1991).

9. Two *penalty taxes*, the personal holding company tax and the accumulated earnings tax, exist to thwart unreasonable retention at the corporate level of individual and corporate earnings. However, tax planning strategies exist to eliminate or greatly reduce their threat. See Lind et al. (1987, 53, 384-5).

10. The preferential tax rate on capital gains was eliminated in 1986 when it was set equal to the individual tax rate. A small differential was reintroduced in 1990 when the maximum individual tax rate was increased to 31% and the maximum capital gains rate left at 28%. If the stock were held until death, the double tax would be completely avoided through the step up of basis allowed to property acquired from a decedent (see IRC §1014).

11. Excessive payments may be challenged by the IRS, particularly when there is substantial overlap in the corporation's officers and shareholders (see, e.g., Raby's 1992 explanation of *Richlands Medical Association v. Commissioner*, No. 91-1609 [4th Cir. Jan. 31, 1992]).

12. Nelson (1988) presents a description of the historical significance of various noncorporate businesses, including subchapter S corporations.

13. 1982 is the most current year for which information on the number of shareholders was available; the question was dropped from the 1120S tax form in 1983. This question has been reinstated on the 1988 form and added to the 1988 form 1120, filed by C corporations.

14. MacKie-Mason and Gordon (1991) have examined the role of taxes in the distribution of assets between various organizational forms. Guenther (1992) has tested the role of taxation in the choice between corporations and master limited partnership prior to TRA86.

15. See Maddala (1983, 1991) for a discussion of the advantages of using probit or logit rather than the linear probability or linear discriminant model in this type of situation. Maximum likelihood estimation was performed using the Fletcher-Powell algorithm in Crawtran. See Avery (1980) for a description.

16. For a general description of the sample see U.S. Internal Revenue Service (1987, sec. 3).

17. The Subchapter S Revision Act of 1982 generally eliminated the ability of shareholders to defer income into the next tax year by using a noncalendar fiscal year for the S corporation. C corporations are not restricted in their use of a noncalendar fiscal year. The ability to obtain this short-term deferral is not considered to be a determining factor in the choice of entity.

18. The alternative would be to combine the groups and use a dummy variable as a shift parameter for loss corporations. If this is done the dummy variable is statistically significant, but does not address the question of whether the two groups should be combined. The hypothesis that the two samples can be pooled cannot be accepted at any reasonable level of significance. The test statistic of 80.6 exceeds the 46.9 value of the chi-squared distribution at the .995 percentile.

19. For example, loans made by the corporation (and listed as an asset) are offset by the corporation's own debt (a liability), thereby producing a separate measure of the corporation net of offsetting financial transactions.

20. States which did not recognize S corporations for state tax purposes in 1984 were Alabama, California, Connecticut, the District of Columbia, Louisiana, Massachusetts, Michigan, New Hampshire, New Jersey, North Carolina, Ohio, South Carolina, and Tennessee (see Maule 1984). A number of these states have made revisions to their laws since 1984. For a more recent description of states' tax treatment of S corporations see Reynolds and Kessel (1988) or Raabe and Boucher (1993).

21. At the very least, corporations would be required to keep an additional set of tax and financial records for state tax reporting purposes. In addition, an S corporation which carried on business in more than one state would also be subject to conflicting apportionment issues.

22. C-to-S conversions are subject to the built-in gains tax of §1374 for a recognition period of 10 years (see Fellows 1987; Schmehl 1987).

23. Nelson (1992) provides a description of recent S corporation activity.

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George A. Plesko is an assistant professor of economics at Northeastern University in Boston, Massachusetts. His research interests include federal tax policy, corporate taxation and the financial policies and organization of businesses, and federal budget policy. Other recent work has appeared in the Journal of Accounting Research *and the* National Tax Journal.