An Empirical Analysis of the Impact of Tax Rates on Subchapter S Elections

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Abstract

Selecting the appropriate form of organization may be a difficult choice for a small business firm. The corporate form offers legal liability but imposes double taxation. The choice often becomes a trade-off between the nontax benefits of incorporating and the costs of double taxation. Certain small businesses qualify to make an election under Subchapter S of the tax code which allows them to operate as a corporation, but avoid the corporate tax by passing through taxable income or loss to shareholders. These firms are known as S corporations. This article examines the impact of personal and corporate tax rates on the propensity for small businesses to elect to operate as S corporations. The behavior of gain and loss firms is analyzed separately. Empirical tests suggest that tax rates do have a significant and sometimes surprising impact on this choice. These findings have significance for policymakers in attempting to reduce the costs of taxes to new firms which may be inhibited from entering the market due to the impact of double taxation.

Introduction

Business activity is typically undertaken in the form of a sole proprietorship, a partnership, or a corporation. Under U.S. tax law the tax treatment of these organizational forms differs. Sole proprietorships and partnerships are conduits in which the income of the business entity is not taxed to the entity as a separate unit, but goes directly to the owner to be taxed along with other personal income. In contrast, the corporation pays tax on its income as a separate unit. When after-tax corporate earnings are distributed as dividends they are taxed again as personal income to the shareholder. This phenomenon of double taxation tends to make the corporate form of organization less attractive due to higher tax costs.

It is well established in economic theory that all costs must be considered in making decisions for an economic unit. (Williamson, 1981; Arrow, 1969) When there are differential tax costs across organizational types, they are likely to play a significant role in choosing organizational form. Scholes and Wolfson (1991) argue that in choosing a form of organization the nontax advantages of incorporating must be weighed against the additional tax costs incurred. These nontax benefits include such factors as limited liability, better access to capital markets and easy transfer of ownership. For many firms these advantages outweigh the cost of the corporate tax.

Firms requiring the limited liability afforded by

incorporation may be discouraged from entering the market due to the additional cost of double taxation. To eliminate this barrier to entry the tax code makes another choice available for small firms which must operate as corporations but wish to avoid paying tax on corporate income. Corporations having less than 35 shareholders and meeting other specific qualifications may choose to be taxed as a partnership by making a special election under Subchapter S of the Internal Revenue Code.¹ These firms, known as S corporations, pay no corporate tax. Their income or loss passes through to shareholders who then include it with their personal taxable income in the same manner in which a partner includes partnership income.

The most important factors affecting the desirability of an S election are the benefits of avoiding the corporate tax and the cost of personal tax incurred by shareholders who must report corporate income when passed through. These costs and benefits are determined by the personal and corporate tax rates. A C corporation is any corporation not making an S election. All C corporations are subject to the corporate tax. The differential tax cost between operating as an S or a C corporation is determined by the relative personal and corporate tax rates. It is also affected by timing, since the C corporation may defer payment of dividends which increase shareholder's personal income while the S corporation's earnings flow through immediately to the

shareholder without delay.

Under the S election the personal tax rate determines the benefits of having corporate losses pass directly through to shareholders. The incentive for loss firms to make an S election is thus linked to the personal tax rate. For gain firms the cost of having corporate income taxed immediately to the shareholder without opportunity to defer personal tax consequences through the delay of dividend payments is also determined by personal tax rates. This would imply that when the personal tax rate changes the preference for S elections by both gain and loss firms also changes.²

The corporate tax rate is another determinant of the S election decision. The cost of double taxation is the excess tax paid at the corporate level which is determined by this rate. The immediate tax savings incurred by making an S election and avoiding double taxation is thus determined by the corporate tax rate, making it a vital consideration in selecting S status.

The effect of tax rate changes on S elections is a significant factor when policymakers consider altering the corporate or personal tax rates. Accurate revenue estimation becomes increasingly important given concerns about budget deficits. Shifting from C corporate status to an S corporation not only alters the tax liability of the firm, but changes the revenue which the taxing authority may expect to collect. This suggests the importance of an empirical understanding of the link between tax rates and the propensity to make S elections.

Some theoretical research exists regarding the choice of organizational form (e.g. Alchian (1972), Jensen and Meckling (1976)), however, there is little empirical evidence regarding the factors which are significant in this decision. Recent work has focused primarily on the impact of personal tax rates alone as a determinant of the influence of taxes on organizational choices. Mackie-Mason and Gordon (1991) and Gordon and Mackie-Mason (1991) examine the shifting of assets and income among the three primary forms of organization in response to several proxies for personal tax rates.

This article examines the responsiveness of S elections to both the personal and corporate tax rates. Additional tax provisions which affect the cost and benefits of the S election are also identified and examined. Hypotheses are developed which predict the behavior of both gain and loss firms in response to these significant tax factors. Tests reveal that in general both corporate and personal taxes have a strong impact on this decision for all firms.

Description of Hypotheses

One of the advantages of the S election is the ability to pass corporate losses through to shareholders who may obtain a significant tax benefit by offsetting such losses against other high tax bracket income. This establishes a link between the shareholder's personal tax rate and the tax savings generated by the firm's losses. The magnitude of this tax saving is determined by both the personal tax rate and the amount of loss incurred by the firm. The personal rate has changed numerous times since the inception of Subchapter S in 1958.

Figure 1
Relative Personal and Corporate Tax Rates
over Sampled Period

Maximum Tax Rate Individuals	Maximum Tax Rate Corporations	Difference	Effective Period
.91	.52	.39	1958-1963
.70	.48	.22	1964-1978
.70	.46	.24	1979-1981
.50	.46	.04	1982-1986
.385	.40	-.015	1987
.28	.34	-.06	1988

Figure 1 reports the maximum personal and corporate tax rates in effect for the time period 1958 through 1988.

Another significant change in the benefit of passing through S corporation losses is the limitation on the amount of loss which can pass through to each individual shareholder. Shareholders may not claim losses in excess of their basis in stock holdings and personal loans to the corporation. Prior to the Subchapter S Revision Act of 1982 (SSRA), any loss which exceeded the shareholder's basis in stock and debt could not be used by the shareholder and was not carried forward. This created a significant aversion to the S election for firms with large losses. Beginning with the SSRA such losses are suspended and carried forward until sufficient basis exists to allow them to flow through to the shareholder. The enactment of this provision reduced the risk of inaccessible tax losses within an S corporation, potentially making the S election more attractive to loss firms.

A restriction was also imposed on the flow-through of losses to shareholders with the enactment of the at-risk rules in 1976.³ These rules limit the losses which any investor may claim from a venture to the amount of property and cash invested plus the amount of any debt for which the investor is personally liable. Allowable

losses for each year are first limited to the shareholder's basis in stock and debt as previously noted. A second test is then applied to determine if there are sufficient amounts at-risk to allow the loss to be claimed in the current year. Losses which are disallowed under the at-risk rules are suspended and carried forward until sufficient amounts at-risk exist to offset the loss. Unlike the 1982 changes which increase the likelihood of passing through an S corporation loss, the 1976 rules delay the accessibility of losses to S corporation shareholders.

The impact of these changing tax rules on a firm's preference for the S election will depend on whether it is currently incurring gains or losses. The loss limitation rules are expected to affect the choice made by loss corporations which will have a greater incentive to make S elections in periods in which the restrictions on passing through losses are relaxed. The following hypothesis is drawn from these incentives.

H1: Loss firms will prefer (avoid) the S election as loss limitations are reduced (increased).

As personal tax rates increase, the tax savings incurred from losses passed through to shareholders will also increase. In contrast firms reporting gains may avoid the S election when the personal tax rate is high or when the corporate tax rate is low. When corporate tax rates are low a tax savings opportunity may exist for gain firms to have income currently taxed at lower corporate rates while personal tax is deferred by delay of dividend

distributions. However, as personal tax rates decrease the S election becomes more attractive for these firms. These relationships form the basis for the following hypotheses.

H2: Loss firms will prefer the S election as personal tax rates increase.

H3: Gain firms will avoid the S election as personal tax rates increase.

H4: Gain firms will prefer the S election as corporate tax rates increase.

Figure 2
Summary Statistics for Sample Period Divided According to Personal Tax Rate in Effect

Panel A - Gain and Loss Firms:

Personal Tax Rate	% S Loss Firms ¹	% S Gain Firms ²	% S Corporations ³
.91	.074	.080	.079
.70	.146	.135	.139
.50	.200	.158	.178
.385	.255	.238	.223
.28	.274	.261	.249

Panel B - Gains and Losses:

Personal Tax Rate	% S Losses ⁴	% S Gains ⁵
.91	.048	.014
.70	.078	.029
.50	.087	.049
.385	.132	.088
.28	.147	.095

- 1 Percent of all corporations reporting losses which are S corporations.
- 2 Percent of all corporations reporting gains which are S corporations.
- 3 Percent of all corporations which are S corporations.
- 4 Percent of all corporate losses which are reported by S corporations.
- 5 Percent of all corporate gains which are reported by S corporations.

Method of Analysis

Data

The data employed in the statistical analyses are taken from the aggregate statistics of income data published by the U.S. treasury Department (Internal Revenue Service, 1958...1988). These statistics are derived from a sample of tax returns in the corporate sector. Aggregate financial statement information is provided separately for both S and C corporations. The period sampled begins with 1958, the year in which Subchapter S was enacted, and extends through 1988. Figure 2 provides

various sample statistics according to the personal tax rate in effect. The second column of panel A represents the average annual percentage of all corporations reporting losses which are S corporations and the third column reports the same statistic for gains. The fourth column indicates the average annual percentage of all corporations which are S corporations within the time period during which each personal tax rate was in effect. The second column of Panel B reports the average annual percentage of total corporate losses which were reported by S corporations and the third column reports the same statistic for gains.⁴

Model

The objective of the empirics is to determine the impact of the personal tax rate, the corporate tax rate, and loss limitations on S elections. The incentive to elect S status is dependent on whether the firm anticipates gains or losses. Four separate dependent variables are identified which examine the sensitivity of gain and loss firms to changes in tax rates. These variables are defined in Figure 3. The first two dependent variables are loss measures which include the percentage of total corporate losses reported by S firms and the number of S firms reporting losses as a percentage of all loss corporations reporting losses. The remaining two variables are gain measures which are the percentage of total corporate gains reported by S firms and the number of S firms reporting gains for each year in the sample as a percentage of all corporations reporting gains. Each of these variables is separately tested in the regression analysis described below.

Figure 2 reports the mean annual percentage for each

appear to refute hypothesis 2. However, the statistics reported in Figure 2 may reflect a learning curve in which S elections are increasing (for both gain and loss firms) as taxpayers become more educated about this choice. In order to control for this potential learning effect the regression includes a variable to capture the effect of the passage of time since Subchapter S was enacted.

The model identified below is separately estimated for each of the four gain and loss measures presented in Figure 3. The regression is estimated over the sample period of 1958 through 1988. It includes a **PTAX** variable which assumes the value of the personal tax rate for each year included in the sample. A second variable, labeled **CTAX**, assumes the value of the corporate tax rate for each year as reported in the second column of Figure 1.

It is possible that changes in the number of firms making S elections will occur over time as more firms become aware of the opportunity to make such an election. To control for this potential learning effect a **TIME** variable is included which represents the number of years which Subchapter S has been in effect.⁵ This variable enters the regression in log form since the impact of learning is not expected to be constant across time. The log transformation allows for a nonlinear relationship between **TIME** and the dependent variable. A fourth variable is also included to observe the impact of the Subchapter S Revision Act of 1982 (**SSRA**) which is the most important tax act to affect the incentive for S elections. Its value is zero for years prior to 1982 and one for years thereafter. The direction of the sign on this variable is likely to be positive due to the relaxation

of a number of S election restrictions, including loss limitations, within this tax act. The other factor affecting the pass through of losses is the at-risk rules discussed previously. To account for this factor a variable denoted **RISK** is also included which assumes a value of zero prior to the enactment of the at-risk rules in 1976 and one thereafter. The hypothesized sign on this variable is negative since it created a restriction on losses passed through.

The statistical model is

represented as follows:

$$S_{it} = B_0 + B_1 PTAX_t + B_2 CTAX_t + B_3 SSRA_t + B_4 RISK_t + B_5 \ln(TIME)_t + e_{it}$$

one of the gain and loss measures over the years 1958 through 1988 according to the maximum personal tax rate which was in effect. The increase in the loss measures as the personal tax rate decreases would

Figure 3

Measure of Incentive for S Election by Gain and Loss Firms

Loss Measures:

S_{Loss} = Percentage of total corporate losses reported by S corporations.¹

$S_{Loss\ Firms}$ = Percentage of all loss corporations which are S corporations.²

Gain Measures:

S_{Gain} = Percentage of total corporate gains reported by S corporations.¹

$S_{Gain\ Firms}$ = Percentage of all gain corporations which are S corporations.²

1 This percentage is based on dollar amount of losses (gains).

2 This percentage is based on number of firms reporting losses (gains).

Where: S = One of the four measures of gain or loss
 e = Residual component
 i = Subscript denoting gain or loss
 t = Subscript for year ($t=1958....1988$)

Results

Loss Firms

The empirical findings regarding the loss measures are reported in Tables 1 and 2. Table 1 indicates coefficients from a regression of S corporation losses and Table 2 contains coefficients for a regression of S corporation loss firms. The loss measures exhibit the predicted response to the SSRA. The SSRA's relaxation of the loss limitations clearly made the S election more attractive to loss firms. The positive and significant coefficient on the SSRA variable (.029 for losses and .039 for loss firms, both with $p=.008$) provides support for hypothesis 1 across both loss measures.

Neither loss variable exhibits the predicted response to the RISK variable. The at-risk rules placed a new limitation on passing through losses and consequently the hypothesized sign on this variable is negative. The S corporation losses do show a slight negative reaction to the RISK variable (-0.01) but the coefficient does not obtain an acceptable level of significance ($\text{prob} = .168$). The S loss firms show a positive (but insignificant) reaction to the at-risk changes which is a puzzling result. It may be that the at-risk rules were not an inhibiting factor for most S corporations.⁶ It is noteworthy that once a firm terminates an S election, it is subject to a five year waiting period before filing another election. This may delay or eliminate responses to at-risk limits which can vary from year to year, although it is not possible to draw definitive conclusions since the coefficient is not statistically significant.

Results for both loss measures show a positive and significant coefficient on the personal tax rate variable,

PTAX. This suggests evidence in support of hypothesis 2. It is noteworthy that Figure 2 implies a negative correlation of the loss measures with the personal tax rate. However, the effect of learning over time is an influential factor as demonstrated by the positive and highly significant coefficient for the TIME variable in both Tables 1 and 2. This process of education over time is a likely explanation for the increase in both loss measures as personal tax rates decline in Figure 2. The regression results suggest that when this TIME effect is removed, there is a significant positive relationship between losses reported by S corporations and the level of personal tax rates.

Gain Firms

Tables 3 and 4 provide results for the measures of gain. Table 3 reports regression estimates for the S corporation gains and Table 4 contains estimates from a model of S corporation gain firms. The coefficient for the personal tax rate variable is negative but insignificant for S corporation gains reported in Table 3. However, the PTAX variable exhibits a positive and significant coefficient in relation to S corporation gain firms. This evidence refutes hypothesis 3 which predicted a negative correlation between S corporation gains and the personal tax rate. It may be that the impact of corporate tax rates is the dominant factor for gain firms in the S election decision. Results would appear to support this notion since both gain measures exhibit a negative and highly significant coefficient on the CTAX variable (-.339 for gains and -.863 for gain firms, both with $p < .0001$). This negative relation between S corporation gains and the corporate tax rate is predicted by hypothesis 4.

Together the tax variable coefficients (PTAX and CTAX) suggest an aversion to the double taxation effect of corporate taxes. Double taxation is affected by both personal and corporate taxes, since dividend distributions are taxed at the personal tax rate. This may explain why gain firms will shift to S status even though the personal tax rate is increasing.

Although no predictions were made regarding the impact of loss limitations on gain firms the results are of interest. The gain measures both indicate significant increases with the enactment of the SSRA. It is likely

Table 1
Regression Results - Percent of Corporate Losses Reported by S Corporations

$$S \text{ Election}_{\text{Loss},t} = B_0 + B_1 \text{PTAX}_t + B_2 \text{CTAX}_t + B_3 \text{SSRA}_t + B_4 \text{RISK}_t + B_5 \ln(\text{TIME})_t + e_{i,t}$$

Variable	Expected Sign	Coefficient	t-value	Prob
CONSTANT	None	0.277	5.326	0.000
PTAX	+	0.143	2.836	0.009
CTAX	None	-0.730	-4.954	0.000
SSRA	+	0.029	2.903	0.008
RISK	-	-0.010	-1.420	0.168
ln(TIME)	+	0.019	4.035	0.000

F-Statistic = 25.582 Adjusted $R^2 = .804$

Table 2
Regression Results - Percent of Loss Corporations reporting as S Corporations

$$S \text{ Election}_{\text{LossFirms},t} = B_0 + B_1 \text{PTAX}_t + B_2 \text{CTAX}_t + B_3 \text{SSRA}_t + B_4 \text{RISK}_t + B_5 \ln(\text{TIME})_t + e_{i,t}$$

Variable	Expected Sign	Coefficient	t-value	Prob
CONSTANT	None	0.288	4.065	0.000
PTAX	+	0.158	2.313	0.029
CTAX	None	-0.790	-3.949	0.001
SSRA	+	0.039	2.875	0.008
RISK	-	0.014	1.507	0.144
ln(TIME)	+	0.046	7.337	0.000

$$F\text{-Statistic} = 79.964 \quad \text{Adjusted } R^2 = .913$$

that various changes within the SSRA made the election more attractive to gain firms. It also may be that gain firms anticipate future losses and thus have an aversion to S elections when loss limitations are in effect. This explanation is also supported by the negative and significant coefficient for the **RISK** variable in both Table 3 and 4. The results for the **RISK** variable suggest that when at-risk limits were imposed gain firms were less likely to make an S election. This is a particularly interesting and puzzling result given the insignificant coefficient on this variable for loss firms, which were more immediately affected by the at-risk rules.

Conclusion

This study has shown that personal and corporate tax rates, as well as loss limitations, have an impact on the choice of small business regarding its form of organization. As personal tax rates increase, loss firms exhibit an increasing preference for the S election. Small business firms with gains appear to have a strong aversion to increasing corporate tax rates and will tend to shift to the status of an S corporation as corporate tax rates go up.

It was also observed that limitation on the amount of S corporation losses passed through to shareholders has a significant impact on S elections. The aversion to loss limitations seems to

be more significant for gain firms than loss firms. This is a surprising result and may signal the anticipation of future losses by corporations currently reporting gains.

The empirical evidence offered here implies that S elections are preferred or avoided in response to both personal and corporate tax rates.

This suggests that while double taxation would deter the organization of some business due to its added cost, the option of electing to be an S corporation promotes the existence of a segment of economic activity which would otherwise not exist. These findings support the notion that Subchapter S is fulfilling its objective of benefiting small business and that the benefits provided by this election appear to have increased over time.

Suggestions for Future Research

As evidenced by this study tax research is often limited by the lack of public access to tax returns and related data for individual entities. The current project was completed with aggregate data. Future research should focus on the collection and analysis of data from individual firms. The availability of such a data base would allow expansion of the model and provide a more informative analysis as to the sensitivity of individual businesses to specific tax changes.

Table 3
Regression Results - Percent of Corporate Gains Reported by S Corporations

$$S \text{ Election}_{\text{Gain},t} = B_0 + B_1 \text{PTAX}_t + B_2 \text{CTAX}_t + B_3 \text{SSRA}_t + B_4 \text{RISK}_t + B_5 \ln(\text{TIME})_t + e_{i,t}$$

Variable	Expected Sign	Coefficient	t-value	Prob
CONSTANT	None	0.189	8.334	0.000
PTAX	-	-0.005	-0.239	0.813
CTAX	-	-0.339	-5.275	0.000
SSRA	None	0.024	5.470	0.000
RISK	None	-0.010	-3.281	0.003
ln(TIME)	+	0.003	1.514	0.143

$$F\text{-Statistic} = 90.156 \quad \text{Adjusted } R^2 = .937$$

Table 4
Regression Results - Percent of Gain Corporations reporting as S Corporations

$$S \text{ Election}_{\text{GainFirms},t} = B_0 + B_1 \text{PTAX}_t + B_2 \text{CTAX}_t + B_3 \text{SSRA}_t + B_4 \text{RISK}_t + B_5 \ln(\text{TIME})_t + e_{i,t}$$

Variable	Expected Sign	Coefficient	t-Stat	Prob
CONSTANT	None	0.412	10.873	0.000
PTAX	-	0.092	2.521	0.018
CTAX	-	-0.863	-8.055	0.000
SSRA	None	0.026	3.511	0.002
RISK	None	-0.014	-2.703	0.012
ln(TIME)	+	0.020	8.175	0.000

F-Statistic = 138.511 Adjusted R² = .958

Additional research on specific tax law changes other than tax rates would also be informative. For example, the 1986 Tax Reform Act introduced an Alternative Minimum Tax which differs for individuals and corporations. Future studies should examine whether this and other similar tax law changes impact the propensity for the S election.

*****Footnotes*****

1. To qualify for a Subchapter S election a firm must be a domestic corporation with no more than 35 shareholders, no more than one class of stock, and must not be part of an affiliated group. It must have only qualified shareholders and must not be an ineligible corporation. These qualifications are summarized in Internal Revenue Code Section 1361.
2. Throughout this discussion gain firms refer to firms reporting a positive net income for the current year. Loss firms refer to those reporting no income or a loss for the current year.
3. Internal Revenue Code Section 465.
4. Panel A relates to the number of firms in each category, while Panel B relates to the dollar amount of gains and losses.
5. The TIME variable equals 1 for 1958 and increases to 31 for 1988.
6. This may be true since the purpose of enacting the at-risk provision was to subdue abusive tax shelters which most often take the form of partnerships or limited partnerships.

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