

# CHARACTERISTICS OF BUSINESS OWNERSHIP: OVERVIEW FOR PASS-THROUGH ENTITIES AND EVIDENCE ON S CORPORATE OWNERSHIP FROM LINKED DATA\*

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## INTRODUCTION

**P**ASS-THROUGH BUSINESSES ARE BECOMING increasingly important contributors to the nation's economy.<sup>1</sup> From 1980 to 2006, their share of total receipts rose from 13 percent to 34 percent, and their share of net income grew from 21 percent to 45 percent. It was estimated that in 2006 30 percent of income taxes (corporate and individual) were paid by individuals on income from flow-through businesses.<sup>2</sup> In spite of their growing importance, limited data have been available on the characteristics of the owners of flow-through businesses, which in turn has limited the analyses on the effect of taxes on this sector of the economy.<sup>3</sup>

This paper seeks an improved understanding of the characteristics of owners of flow-through businesses and takes a step toward providing that link between flow-through businesses and their owners. The second section of this paper summarizes what is knowable from unlinked IRS data about business owners. The third section turns to a nationally representative sample of S corporation tax returns that have been linked through their K1s<sup>4</sup> to the population of their owners. This linked data set provides concrete descriptions of the owners (primarily individuals) of S corporations according to characteristics of those businesses. Because many individuals own shares in more than one S corporation, a different set of weights needs to be developed to make the linked data represent the population of individuals who own S corporations. The fourth section presents a new process for weighting subsets of stratified random samples. The fifth section uses these new weights to look from the perspective of individuals at the characteristics of the S corporations owned by individuals at different income levels. The sixth section provides a summary and plans for future research.

## PASS-THROUGH OWNERSHIP FROM UNLINKED DATA

The Statistics of Income (SOI) office of the IRS regularly supplies to the Treasury Department and the Joint Committee on Taxation some information on the characteristics of owners of flow-through businesses. These data come from edited, nationally representative samples of income tax returns filed by individuals or businesses.<sup>5</sup>

### Pass-through Returns

For non-farm and farm sole proprietorships, characteristics of the owner and the business are automatically linked because the owner's Form 1040 tax return includes Schedule C and Schedule F which report, respectively, profit or loss from non-farm sole proprietorships or from farming. For partnerships and S corporations, regularly provided IRS data offer little insight into their ownership because the tax returns of the businesses are not linked to the tax returns of the owners. For S corporations, the only SOI information relating shareholders to their S corporations has been the number of shareholders. For partnerships, in addition to knowing the number of partners, the amount of total income allocated to different types of partners is also reported.

### Individual Returns

From the perspective of individual owners of flow-through businesses, data from the Form 1040 show how many taxpayers receive income or loss from partnerships and S corporations, but indicate nothing about the characteristics (size, industry, age, etc.) of those businesses. A summary of some of the available data is presented in Tables 1 through 4.<sup>6</sup> These tables show 2005 pass-through income<sup>7</sup> flowing to individual taxpayers by type of entity, displaying the number of recipients, dollar amounts, and other information, for different AGI classes.<sup>8</sup> Generally, and to paraphrase Fitzgerald (1926) "Let me tell you about the very rich. They are different from you and me. They [have more

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\*The views expressed are those of the authors and not the official position of the Joint Committee on Taxation or the U.S. Treasury Department. Any errors are solely the responsibility of the authors.

business income].” While it is well known that high-income taxpayers receive a concentration of income that is disproportionate to their numbers, this is even more apparent for taxpayers receiving business income. Business income recipients have higher average AGI in every income category (see bottom of Table 1). Among taxpayers with business income, the highest-income group received 29 percent of the total AGI accruing to business-income recipients (see bottom of Table 4). This is more than double the 14 percent concentration of AGI in the highest income category for taxpayers in general. And the concentration of business income itself rises generally with income, as the highest AGI category receives more than a third of all business income (see top of Table 4).

Among all taxpayers with flow-through income or loss, mean business income or loss is \$20,576 per return (see Table 1).<sup>9</sup> S corporations provide the highest mean amount of net income to their owners, with \$60,755, followed by partnerships with \$34,381. Table 1 also shows that recipients of business income, on average, have substantially higher AGI than do taxpayers in general: \$96,570 vs. \$55,238, respectively.

For the positive AGI classes, mean income for every business source examined rises monotonically with AGI, except for farm net income.<sup>10</sup> Mean net farm income is negative for every AGI class, and the losses become generally more negative as AGI increases. At all income levels except \$0 - \$50,000, S corporations provide the largest mean amount of income. For incomes below \$250,000, sole proprietorships provide nearly as much (or more in the \$0-\$50,000 class) in average amounts of net income.

Among the 3 percent of business income return taxpayers who have negative AGI, recipients of business net income or losses show mean losses for each business source examined. Somewhat surprisingly, though, business losses account for only about half (53 percent) of the negative AGI for recipients of business income, leaving nonbusiness sources to account for the remaining negative AGI. The largest contributors to negative AGI are partnership and S corporation active losses (respectively, 40 percent and 36 percent of negative AGI for its recipients).<sup>11</sup>

Overall, business income amounts to 21 percent of AGI for recipients of business income (Table 2). Looking at the distribution across AGI categories of the share of each business income source in AGI for the business income recipients, there is a dip in

the share of business income in AGI for taxpayers between \$50,000 and \$100,000 of AGI – this group is the least dependent on business income. Overall and at most income levels, S corporation income provides the largest share of AGI to its recipients.

Tables 3 and 4 show how the distributions of returns with business income and the distributions of that income across AGI classes compared by type of business income with taxpayers in general and their AGI. Of the 33 million returns with net business income or loss, half the returns showing this (overall) source of income have AGI between \$0 and \$50,000, compared to 67 percent of all taxpayers (Table 3). And 0.8 percent of the returns with this income have AGI of a million dollars and up, compared to 0.2 percent of all taxpayers. Among types of business income, sole proprietorship and farm income recipients are more concentrated in the lowest (positive) income category. Partnership income generally reaches highest up the income categories with S corporations close behind, with 4 percent of both types of recipients having AGI of a million dollars and up. Looking at the share of dollars of each income source received in each AGI class shows that business income is even more concentrated in upper incomes, relative to overall AGI, than are taxpayers (see Table 4). For all net business income or loss, taxpayers with AGI of a million and up receive over a third of this (overall) business income, a larger percentage than any other AGI category and more than twice as much as the share of all AGI – 14 percent – going to the top AGI class. The concentration of partnership and S corporation income at high AGI levels is even more pronounced. Close to half (45 percent) of all partnership income is received by taxpayers with AGI of a million dollars or more, and nearly three-fifths (58 percent) of all S corporation net income is received in this AGI category. By contrast, sole proprietorship income is more concentrated at the bottom of the income distribution: 30 percent of sole proprietor net income goes to taxpayers with positive AGI under \$50,000, compared to only 25 percent of all AGI.

#### **DATA LINKS BETWEEN S CORPORATIONS AND THEIR OWNERS**

Although taxpayers annually provide the IRS with the data that would be needed to describe who owns what kinds of S corporations, and what kinds of S corporations individual taxpayers

Table 1  
**Mean Amount of Business Net Income or Loss, by Source and AGI Category, 2005**

|                       | All Returns | AGI < \$0 | \$0 ≤ AGI < \$50,000 | \$50,000 ≤ AGI < \$100,000 | \$100,000 ≤ AGI < \$250,000 | \$250,000 ≤ AGI < \$1,000,000 | \$1,000,000 ≤ AGI |
|-----------------------|-------------|-----------|----------------------|----------------------------|-----------------------------|-------------------------------|-------------------|
| All Business Income   | 20,576      | -41,118   | 4,722                | 8,619                      | 28,658                      | 129,339                       | 919,574           |
| Sole Proprietorship   | 12,590      | -11,678   | 6,584                | 11,017                     | 28,197                      | 81,041                        | 197,717           |
| Farm Proprietorship   | -6,088      | -24,862   | -3,913               | -3,846                     | -5,662                      | -14,744                       | -54,286           |
| Rental and Royalties  | 2,607       | -9,258    | -733                 | 73                         | 4,803                       | 20,333                        | 87,193            |
| Partnership           | 34,381      | -94,513   | 3,284                | 7,486                      | 22,274                      | 83,489                        | 353,931           |
| Active                | 41,385      | -117,833  | 3,745                | 8,173                      | 28,129                      | 109,327                       | 373,530           |
| Passive               | 16,852      | -13,704   | 1,955                | 5,256                      | 10,685                      | 27,526                        | 122,665           |
| S Corporation         | 60,755      | -65,776   | 1,126                | 11,766                     | 31,314                      | 123,660                       | 998,982           |
| Active                | 58,743      | -70,339   | 547                  | 10,949                     | 30,602                      | 126,433                       | 1,022,482         |
| Passive               | 50,765      | -475      | 4,815                | 13,500                     | 24,906                      | 64,826                        | 357,550           |
| Adjusted Gross Income |             |           |                      |                            |                             |                               |                   |
| All Taxpayers         | 55,238      | -56,876   | 20,950               | 70,419                     | 140,880                     | 420,021                       | 3,377,183         |
| Business Owners       | 96,579      | -77,077   | 22,026               | 71,819                     | 146,019                     | 435,039                       | 3,548,675         |

Note: Based upon tabulations of 2005 individual tax return data. See text.

*Table 2*  
**Share of This Income Source in AGI for Business Owners with This Type of Income, by AGI Category, 2005**

|                      | All Returns | AGI < \$0 | \$0 ≤ AGI < \$50,000 | \$50,000 ≤ AGI < \$100,000 | \$100,000 ≤ AGI < \$250,000 | \$250,000 ≤ AGI < \$1,000,000 | \$1,000,000 ≤ AGI |
|----------------------|-------------|-----------|----------------------|----------------------------|-----------------------------|-------------------------------|-------------------|
| All Business Income  | 21%         | 53%       | 21%                  | 12%                        | 20%                         | 30%                           | 26%               |
| Sole Proprietorship  | 18%         | 22%       | 32%                  | 15%                        | 20%                         | 19%                           | 6%                |
| Farm Proprietorship  | -7%         | 31%       | -16%                 | -5%                        | -4%                         | -3%                           | -1%               |
| Rental and Royalties | 2%          | 9%        | -3%                  | 0%                         | 3%                          | 5%                            | 2%                |
| Partnership          | 11%         | 36%       | 13%                  | 10%                        | 14%                         | 18%                           | 9%                |
| Active               | 12%         | 40%       | 15%                  | 11%                        | 18%                         | 23%                           | 9%                |
| Passive              | 4%          | 4%        | 7%                   | 7%                         | 7%                          | 6%                            | 3%                |
| S Corporation        | 23%         | 33%       | 4%                   | 16%                        | 20%                         | 27%                           | 25%               |
| Active               | 23%         | 36%       | 2%                   | 15%                        | 20%                         | 28%                           | 26%               |
| Passive              | 10%         | 0%        | 19%                  | 18%                        | 16%                         | 14%                           | 7%                |

Source: Based on tabulations of unpublished IRS data of individual income tax returns for 2005.

Table 3  
Share of Returns with Business Net Income or Loss Among those Showing this Income Source, by AGI Category, 2005

|                       | Number of Returns (thousands) | AGI < \$0 | \$0 ≤ AGI < \$50,000 | \$50,000 ≤ AGI < \$100,000 | \$100,000 ≤ AGI < \$250,000 | \$250,000 ≤ AGI < \$1,000,000 | \$1,000,000 ≤ AGI |
|-----------------------|-------------------------------|-----------|----------------------|----------------------------|-----------------------------|-------------------------------|-------------------|
| All Business Income   | 33,294                        | 3%        | 50%                  | 26%                        | 15%                         | 4%                            | 0.8%              |
| Sole Proprietorship   | 21,422                        | 3%        | 57%                  | 24%                        | 13%                         | 3%                            | 0.4%              |
| Farm Proprietorship   | 2,000                         | 6%        | 48%                  | 29%                        | 13%                         | 3%                            | 0.6%              |
| Rental and Royalties  | 9,666                         | 3%        | 39%                  | 31%                        | 19%                         | 6%                            | 1.2%              |
| Partnership           | 4,409                         | 4%        | 25%                  | 24%                        | 27%                         | 16%                           | 4.4%              |
| Active                | 2,697                         | 5%        | 26%                  | 22%                        | 26%                         | 16%                           | 5.1%              |
| Passive               | 2,372                         | 3%        | 20%                  | 23%                        | 29%                         | 19%                           | 5.9%              |
| S Corporation         | 4,127                         | 5%        | 24%                  | 26%                        | 28%                         | 14%                           | 3.5%              |
| Active                | 3,650                         | 5%        | 25%                  | 26%                        | 28%                         | 13%                           | 3.4%              |
| Passive               | 716                           | 4%        | 18%                  | 22%                        | 28%                         | 20%                           | 7.5%              |
| Adjusted Gross Income |                               |           |                      |                            |                             |                               |                   |
| All Taxpayers         | 134,373                       | 1%        | 67%                  | 21%                        | 9%                          | 2%                            | 0.2%              |
| Business Owners       | 33,294                        | 3%        | 50%                  | 26%                        | 15%                         | 4%                            | 0.8%              |

Note that the number of taxpayers for all pass-through income is not the total of the number for the five categories because some taxpayers receive more than one type of business income.

Source: Based on tabulations of unpublished IRS data of individual income tax returns for 2005.

Table 4  
Share of Net Business Income or Loss Among those Showing This Income Source, by AGI Category, 2005

|                       | Dollars of<br>Income<br>(in millions) | \$0 ≤     |                | \$50,000 ≤      |                | \$100,000 ≤     |                 | \$250,000 ≤     |                   | \$1,000,000 ≤     |                    |
|-----------------------|---------------------------------------|-----------|----------------|-----------------|----------------|-----------------|-----------------|-----------------|-------------------|-------------------|--------------------|
|                       |                                       | AGI < \$0 | AGI < \$50,000 | AGI < \$100,000 | AGI < \$50,000 | AGI < \$100,000 | AGI < \$250,000 | AGI < \$500,000 | AGI < \$1,000,000 | AGI < \$2,500,000 | AGI < \$10,000,000 |
| All Business Income   | 685,062                               | -6%       | 12%            | 11%             | 21%            | 21%             | 27%             | 27%             | 35%               |                   |                    |
| Sole Proprietorship   | 269,701                               | -3%       | 30%            | 21%             | 28%            | 17%             | 6%              |                 |                   |                   |                    |
| Farm Proprietorship   | -12,169                               | 26%       | 31%            | 18%             | 12%            | 8%              | 5%              |                 |                   |                   |                    |
| Rental and Royalties  | 25,203                                | -12%      | -11%           | 1%              | 35%            | 46%             | 41%             |                 |                   |                   |                    |
| Partnership           | 151,592                               | -10%      | 2%             | 5%              | 18%            | 40%             | 45%             |                 |                   |                   |                    |
| Active                | 111,611                               | -13%      | 2%             | 4%              | 17%            | 43%             | 46%             |                 |                   |                   |                    |
| Passive               | 39,980                                | -2%       | 2%             | 7%              | 18%            | 32%             | 43%             |                 |                   |                   |                    |
| S Corporation         | 250,735                               | -5%       | 0%             | 5%              | 14%            | 28%             | 58%             |                 |                   |                   |                    |
| Active                | 214,407                               | -6%       | 0%             | 5%              | 14%            | 28%             | 58%             |                 |                   |                   |                    |
| Passive               | 36,328                                | 0%        | 2%             | 6%              | 14%            | 26%             | 53%             |                 |                   |                   |                    |
| Adjusted Gross Income |                                       |           |                |                 |                |                 |                 |                 |                   |                   |                    |
| All Taxpayers         | 7,422,496                             | -1%       | 25%            | 27%             | 23%            | 12%             | 14%             |                 |                   |                   |                    |
| Business Owners       | 3,215,502                             | -2%       | 11%            | 19%             | 23%            | 20%             | 29%             |                 |                   |                   |                    |

Note: Based upon tabulations of unpublished IRS data of individual income tax returns for 2005.

own, that data has not been readily available for analysis. The research reported here uses K1 data to provide those links between S corporations and their owners.

Starting with the annual SOI sample of 39,217 S corporation returns for tax year 2005 and their associated 200,731 K1s, SOI used the Social Security numbers of the recipients of these K1s to match them to their unedited individual income tax returns for 2005. In looking closely at the matches, it was clear that a number of the apparent K1-1040 links did not in fact match, either because the name on the K1 was not the same as on the 1040, or because the name on the K1 was in fact not an individual. The result was 166,256 unweighted “good matches” to individual 1040s. An additional 16,900 K1s matched to Trust and Estate Form 1041s for 2005, for an overall match rate of 91.2 percent. Applying to the K1s the weights of their S corporations in the SOI sample, these unweighted good matches represent 5,681,936 weighted K1s going to individuals and another 68,863 going to trusts and estates. Together, these good matches accounted for 93.5 percent of total weighted S corporation income.<sup>12</sup>

These matched 1120S-K1-1040 records permit comparisons among different types of S corporations of the income levels of their individual own-

ers. For example, these matched data can address questions such as, what is the typical income level of the owners of large S corporations compared to the owners of small S corporations? How does the income of owners of many-shareholder S corporations compare to the income of the owners of 1-2 shareholder S corporations?

Table 5 addresses the first of these questions. It presents the median income of the individual owners of S corporations of different sizes (measured by gross receipts of the S corporation) and shows distributions of K1s and ordinary income, for all owners and those with AGI greater than \$1 million. It shows in column (2) that the median AGI of the owners of the smallest S corporations – those with less than \$1 million in gross receipts – was approximately \$84,000, compared to \$676,000 for owners of the largest S corporations, those with over \$50 million in gross receipts. Column (3) shows what percentage of the K1s for S corporations of various sizes go to individual owners with at least \$1 million in AGI. Overall, 6.4 percent of the S corporation K1s are received by millionaires, but this fraction rises consistently with the size of the firm, with 40 percent of the owners of the largest S corporations having AGIs of \$1 million or more. In terms of S corporation ordinary income, column 4 shows that 20 percent is generated by

*Table 5*  
**Median AGI of S Corporation Owners and Share over \$1 Million AGI,  
by Gross Receipts of S Corporation, 2005**

| <i>Gross Receipts of S Corporation</i> | <i>S Corporation Shareholders (K1s)</i> |                   |                                     | <i>S Corporation Ordinary Business Income</i> |  |
|--|---|-------------------|-------------------------------------|---|--|
|  | <i>Share of K1s</i>                     | <i>Median AGI</i> | <i>Percent over \$1 million AGI</i> | <i>Share of S corporation ordinary income</i> | <i>Percent of ordinary income over \$1 million AGI</i> |
|  | (1)                                     | (2)               | (3)                                 | (4)   | (6)  |
| All                                    | 100.0%                                  | \$98,000          | 6.4%                                | 100.0%  | 52.5%  |
| GR <\$1 mil                            | 77.6%                                   | 84,000            | 4.6%                                | 20.2%   | 11.6%  |
| GR \$1-5 mil                           | 15.0%                                   | 173,000           | 7.3%                                | 25.2%   | 27.9%  |
| GR \$5 - 10 mil                        | 3.0%                                    | 268,000           | 14.9%                               | 9.6%  | 55.4%  |
| GR \$10-25 mil                         | 2.5%                                    | 366,000           | 22.3%                               | 13.2%   | 72.6%  |
| GR \$25-50 mil                         | 0.9%                                    | 522,000           | 33.1%                               | 8.8%  | 81.7%  |
| GR \$50mil +                           | 1.0%                                    | 676,000           | 40.6%                               | 23.0%   | 91.6%  |

Source: Unpublished IRS data.

small S corporations (those with less than \$1 million in gross receipts), but that only 11.6 percent of this income goes to individuals with AGI over \$1 million. The largest businesses – the 1 percent with over \$50 million in gross receipts – generate 23 percent of all S corporation net ordinary income, and 91.6 percent of that income goes to individuals with AGI over \$1 million.

Table 6 categorizes S corporations according to their number of shareholders and compares the AGI of their individual shareholders. It indicates that owners of S corporations with 1 or 2 shareholders have somewhat lower AGI than do the owners of S corporations with greater numbers of shareholders, but that the owners of the S corporations with the most number of shareholders are not necessarily the most affluent. The median AGI of owners of S corporations with one or two shareholders, accounting for 70 percent of all S shareholders, is about \$90,000, whereas the median for S corporations with more shareholders ranges from \$119,000 to \$203,000. In terms of the percent of individual shareholders with AGI of at least \$1 million, S corporations with 1 or 2 shareholders have the fewest very high income shareholders - 4.4 percent and 2.6 percent, respectively, with incomes over \$1 million. S corporations with more shareholders have 7 to 15 percent of their owners in this high AGI category. There is no clear pattern, however, of increasing or

decreasing affluence of owners with the number of shareholders. Beyond the 2-person S corporation, larger-sized S corporations, when measured by number of shareholders, do not necessarily mean higher incomes of shareholders.

**WEIGHTING ISSUES<sup>13</sup>**

To be able to compare the S corporations from which different types (i.e., AGI levels) of individuals receive their S corporation income/loss, the unweighted K1s that produced good matches to Form 1040s need to be made to represent not just the population of 5.7 million S corporation K1s received by individuals but also the population of 4.1 million individual taxpayers owning shares of S corporations. We want to be able to answer questions such as, how do the S corporations owned by high- and low-income individuals compare?

The 166,256 good (unweighted) K1-1040 matches appear on 152,000 separate Form 1040s, either because the taxpayer received K1s from multiple S corporations in the SOI sample or because both spouses were S corporation shareholders of corporations in the SOI sample. With proper weights, the full set of 152,000 good 1040-K1 matches should be able to represent the population of individual owners of S corporations. Calculating these proper weights using available data, however, is complex.

*Table 6*  
**Median AGI of S Corporation Owners and Share of K1s with over \$1 Million AGI by Number of Shareholders of the S Corporation, 2005**

| <i>Number of Shareholders</i> | <i>Share of K1s</i> | <i>Median AGI</i> | <i>Percent over \$1 million AGI</i> |
|-------------------------------|---------------------|-------------------|-------------------------------------|
|                               | <i>(1)</i>          | <i>(2)</i>        | <i>(3)</i>                          |
| All Sizes                     | 100.0%              | \$98,000          | 6.4%                                |
| 1                             | 35.2%               | 88,012            | 4.4%                                |
| 2                             | 34.8%               | 90,396            | 2.6%                                |
| 3 – 5                         | 18.0%               | 123,073           | 9.1%                                |
| 6 – 10                        | 5.5%                | 156,494           | 12.5%                               |
| 11 - 15                       | 2.0%                | 119,101           | 9.8%                                |
| 16 - 30                       | 2.3%                | 147,831           | 9.9%                                |
| 31 - 50                       | 1.3%                | 209,002           | 13.2%                               |
| 51 - 75                       | 0.8%                | 133,085           | 7.5%                                |
| 76 & up                       | 0.1%                | 168,121           | 15.1%                               |

Source: Unpublished IRS data

In the previous section, the weights of the S corporations in the SOI sample were applied to their K1s to produce the weighted dollar amounts and number of K1s by characteristics of the shareholder and the corporation. These weights were based on SOI's stratification that produced the original S corporation sample. To estimate totals for subsets of the population of the 4.1 million Form 1040 filers with S corporation income, a different set of weights is necessary.

The formulation of these 1040 weights is complicated because a 1040 filer may have multiple K1s, and further because some of these K1s may correspond to S corporations which are not, themselves, "in sample." That is, for a Form 1040 to enter the sample, it is necessary only that it have at least one K1 corresponding to an in-sample S corporation. However, the K1s for out-of-sample S corporations still contribute to the probability of selection for the 1040 because of the probability that their S corporation was in the SOI sample of S corporations.

Further, if an S corporation is not in-sample, its stratification variables were not observed in our data. That information could be obtained by a match to the full IRS set of business income tax returns, but that was not available for this research. Consequently, it was necessary to form weights from the probability of selection conditioned on observed variables rather than the unobserved actual stratification variable. Consider the sample in which the 1040s were matched to the K1s from the SOI 1120S cross-section, as described above. Information from the K1s for out-of-sample 1120S corporations but in-sample 1040 filers was attached to the sample, which allowed us to estimate income for the out-of-sample 1120Ss, which we used in turn to infer the probability of selection of out-of-sample S corporations and their K1s.

Let  $I_i = 1$  when the  $i^{th}$  1040 is in-sample,  $I_i = 0$  otherwise. Similarly, let  $I_{ij} = 1$  when the  $j^{th}$  1120S associated with the  $i^{th}$  1040 is in-sample,  $I_{ij} = 0$  otherwise. The design-based probability of selection for an 1120S in stratum  $k$  is  $psel_k$  (U.S. Department of the Treasury, 2008). Thus, if the  $ij^{th}$  1120S is in-sample,  $P(I_{ij} = 1/S_{ij}) = P(I_{ij} = 1/str_{ij}) = psel_{str_{ij}}$ ; otherwise, we take  $S_{ij}$  to be the income for the 1120S, so  $P(I_{ij} = 1/S_{ij}) = P(I_{ij} = 1/inc_{ij})$ , which must be estimated.

We seek the probability of selection for a 1040 filer in this sample. Since the 1040 is in-sample if

at least one of its corresponding K1s is in-sample, we can show

$$P(I_i = 1 | S_i) = 1 - \prod_{j \in T} (1 - psel_{str_{ij}}) \prod_{j \in T'} \left( \sum_k (1 - psel_k) P(str_{ij} = k | S_{ij}) \right),$$

where  $S_{ij}$  and  $S_i$  are available information for filer  $i$  and for the  $j^{th}$  S corporation associated with the  $i^{th}$  filer, respectively. To get  $P(I_{ij} = 0/S_{ij})$  for out-of-sample  $j$ , we can estimate  $p(str_{ij} = k/S_{ij})$  from the full 1120S cross-section. The weight for filer  $i$  is the inverse of this probability of selection,  $w_i = (P(I_i = 1 | S_i))^{-1}$ .

We need to calculate  $p(str_{ij} = k/S_{ij})$ . It is

$$p(str_{ij} = k | S_{ij}) = \frac{p(S_{ij} | str_{ij} = k) P(str_{ij} = k)}{p(S_{ij})},$$

through an application of Bayes' rule. The factor  $P(str_{ij} = k)$  is just the proportion of 1120S forms in stratum  $k$ . The remaining factor,  $P(S_{ij} | str_{ij} = k)$  is taken here to be  $P(inc_{ij} / str_{ij} = k)$ , which can be estimated from the full 1120S cross section.

We also require estimates of the number of form 1040s with ownership of shares in at least one 1120S in a subpopulation defined by a membership in a set  $C$ , where  $C$  is defined by one of the ranges of gross receipt values in Table 5 or a range of another set of S corporation characteristics. That is, if  $A$  is the set of such 1040s, then  $I_i(A) = 1$  if  $I_{ij}(C) = 1$  for at least one  $j$ . Again we have the situation where some of the associated K1s are out-of-sample, so the value of  $I_{ij}(C)$  can not be observed directly, but can be estimated directly from the 1120S cross-section, by estimating the conditional probability that an 1120S is a member of  $C$  given its income is in a given category. Then we can calculate an estimate that filer  $i$  is in  $A$  through an operation similar to that above to get the expression  $\hat{P}(I_i(A) | S_i) = 1 - \prod_{j=1}^J (1 - P(I_{ij}(C) = 1 | S_{ij}))$ . Then the estimated total for  $A$  is  $\hat{T} = \sum_i X_i w_i P(I_i(A) | S_i)$ . We can show asymptotic unbiasedness as the strata in the 1120S cross section gets large.

The new matched sample and weights are calibrated by post-stratifying the sample and ratio-adjusting the weights within each stratum. The stratum totals match control totals taken from the subset of SOI's individual income tax file

with positive S corporation earnings. The results reported here only post-stratify on the basis of AGI on the 1040.

**FROM THE PERSPECTIVE OF  
S CORPORATION OWNERS**

The newly weighted match file 1040s and their K1 links to the nationally representative sample of S corporations can be used to look at characteristics of S corporations owned by different income levels of individuals. Table 7 shows the distribution of individuals with S corporation income or loss according to the level of gross receipts of the corporations they own. If taxpayers receive K1s from more than one S corporation, those K1s are reflected according to the gross receipts of each S corporation. Therefore it is expected that the sum of the percentages for a given AGI level would exceed 100 because of multiple shares.

Table 7 makes a number of points. First, most individuals with S corporation income or loss -79 percent - own at least one share in a very small S corporation (gross receipts under \$1 million). Even for upper-income taxpayers, those with AGI over \$250,000, half receive a K1 from a very small S corporation, and might be considered small business owners. Second, millionaires are

more likely than taxpayers with lower incomes to own S corporations with gross receipts over \$5 million, in particular the largest S corporations with gross receipts either \$10 million to \$50 million, or over \$50 million. But taxpayers with incomes between \$250,000 and \$1 million are most likely to own \$1 million - \$5 million gross receipt S corporations. Table 7 also shows that low- and moderate-income taxpayers (those with less than \$250,000 in AGI) are unlikely to be owners of S corporations with more than \$5 million in gross receipts. Less than 5 percent of taxpayers with income below \$250,000 own any S corporations in the gross receipts categories over \$5 million.

Table 8 shows the distribution of individual S owners by the level of employee payroll of their S corporations.<sup>14</sup> It shows that, overall, 41 percent of taxpayers own S corporations that have no employee payroll. For positive AGI classes, this fraction falls as income rises, until AGI of \$1 million or more. For taxpayers with S corporations that pay some employee wages, those with incomes under \$100,000 are most likely to pay wages between \$10,000 and \$100,000, and those with incomes between \$100,000 and \$1 million are most likely to pay between \$100,000 and \$1 million in wages. The top AGI class is most likely to pay the highest levels of wages.

*Table 7*  
**Distribution of 1040s by AGI and Gross Receipts of Their S Corporations, 2005**

| <i>Distribution<br/>by AGI</i> | <i>Number<br/>of 1040s</i> | <i>Percentage of Taxpayers</i> |                               |                              |                                 |                          |
|--------------------------------|----------------------------|--------------------------------|-------------------------------|------------------------------|---------------------------------|--------------------------|
|                                | <i>ALL<br/>GR</i>          | <i>GR<br/>&lt;\$1 mil</i>      | <i>GR \$1-<br/>&lt;\$5mil</i> | <i>GR \$5-<br/>&lt;10mil</i> | <i>GR \$10 -<br/>&lt;50 mil</i> | <i>GR<br/>\$50 mil +</i> |
| ALL AGIs                       | 4,104,080                  | 79%                            | 15%                           | 3%                           | 5%                              | 1.4%                     |
| Negative AGI                   | 202,409                    | 88%                            | 9%                            | 2%                           | 2%                              | 0.6%                     |
| AGI \$0 - <50K                 | 993,647                    | 92%                            | 7%                            | 1%                           | 1%                              | 0.4%                     |
| AGI \$50K - 100K               | 1,059,222                  | 87%                            | 11%                           | 1%                           | 1%                              | 0.3%                     |
| AGI \$100K - 250K              | 1,139,952                  | 75%                            | 19%                           | 3%                           | 4%                              | 0.8%                     |
| AGI \$250K < \$1 mil           | 562,674                    | 53%                            | 30%                           | 8%                           | 12%                             | 2.9%                     |
| AGI \$1 mil +                  | 143,177                    | 50%                            | 20%                           | 10%                          | 24%                             | 16.1%                    |

Note: Because a taxpayer can own shares in S corporations of different size, the sum of the percentages in a given AGI class is expected to exceed 100.

Source: Unpublished IRS data.

Table 8  
**Distribution of 1040s by AGI and Employee Wages\* of S Corporation, 2005**

*Percentages of all 1040s of a given AGI owning any S corporation with that amount of employee wages*

| AGI Class          | Number of 1040s | No Wages | Wages \$1 - 10K | Wages \$10K - \$100K | Wages \$100K-\$1M | Wages \$1M-\$10M | Wages \$10 M or more |
|--------------------|-----------------|----------|-----------------|----------------------|-------------------|------------------|----------------------|
| ALL AGIs           | 4,101,080       | 41%      | 8%              | 23%                  | 23%               | 8%               | 1.0%                 |
| Negative AGI       | 202,409         | 41%      | 12%             | <b>26%</b>           | 19%               | 5%               | 0.4%                 |
| AGI \$0 - <50K     | 993,647         | 48%      | 12%             | <b>27%</b>           | 12%               | 2%               | 0.2%                 |
| AGI \$50- 100 mil  | 1,059,222       | 43%      | 9%              | <b>27%</b>           | 20%               | 3%               | 0.2%                 |
| AGI \$100-<\$250K  | 1,139,952       | 37%      | 6%              | 23%                  | <b>29%</b>        | 8%               | 0.6%                 |
| AGI \$250-<\$1 mil | 562,674         | 31%      | 4%              | 13%                  | <b>37%</b>        | 20%              | 2.4%                 |
| AGI \$1 mil +      | 143,177         | 38%      | 3%              | 9%                   | 28%               | <b>36%</b>       | 10.5%                |

\*\*"Employee wages" exclude officer compensation.

Note – Percentages sum to more than 100 percent because taxpayers can own shares in multiple S corporations with different amounts of employee wages.

Source: Unpublished IRS data.

## CONCLUSIONS AND FUTURE RESEARCH

This paper has provided information on characteristics of the owners of flow-through businesses. It started with data from unlinked samples of businesses and individuals and then moved to a nationally representative sample of S corporations linked to their owners through the K1s. After developing a new process for weighting the individual income tax returns of the owners of these S corporations, it presented information on the characteristics of the S corporations owned by individuals at different income levels. Among the highlights of these analyses were the findings that, from the perspective of the S corporation, smaller S corporations are more likely to have lower AGI owners than are larger ones. From the perspective of individuals owning some S corporation shares, high AGI individuals are very likely to own shares in small S corporation, more likely to own larger S corporations than are lower AGI taxpayers, and are more likely to own S corporations with the largest amounts of employee wages.

The analyses reported here represent the first of a number of potential avenues for research using newly available links between samples of businesses and their owners. A similar study is planned of a nationally representative sample of partnerships linked through their K1s to individuals, but will be more challenging because of the complex ownership structures allowed in partnerships. With the S corporation data, a logical next step is to link W2s of owners in order to capture officer compensation, an important missing component of earnings from S corporations. Data linking businesses to their owners would also improve the modeling of both corporate and individual tax responses to changes in taxes or incomes at the individual or business level. Such models might then allow distinctions in the effect of tax changes on owners of flow-through businesses and on owners of truly small businesses.

### Notes

<sup>1</sup> Pass-through businesses (also referred to as flow-through businesses) include S corporations, partnerships, limited liability companies (LLCs), and sole proprietorships. Pass-through businesses generally do not bear income tax liability directly but instead pass through the business' income to its owners, who ultimately include the pass-through income in determining their income tax liability.

<sup>2</sup> U.S. Department of the Treasury (2007) page 19; and IRS Statistics of Income, relevant years.

<sup>3</sup> For example, the empirical literature on the effect of individual income taxes on flow-through businesses and their owners has focused on sole proprietorships, to the exclusion of the larger and more complex partnership and S corporation sectors, at least in part because data have not been available that link partners and S corporation shareholders to the specific businesses they own. For a survey of the literature on individual income taxes, see Nelson (2008).

<sup>4</sup> K1s are the information returns on which the S corporation reports each shareholder's share of income, expense, and credits.

<sup>5</sup> For more detailed information on the Statistics of Income samples, see U.S. Department of the Treasury (2008), Marcia and Bryan (2007), and Wheeler and Shumofsky (2007).

<sup>6</sup> An expanded version of these tables is available in Bull et al. (2010).

<sup>7</sup> Pass-through income or loss is defined here as income or loss from Schedule C or F, partnerships, S corporations, rents and royalties. Disallowed passive losses are not included in the figures.

<sup>8</sup> Note that the tables generally report ordinary business income from Schedules C, E, and F; they do not attempt to measure all of the types of income distributed to business income recipients, for example interest or dividend income (Schedule B) or capital gains income (Schedule D). "Net income or loss" is the sum of all of the positive and negative income for the category. The tables provide a categorization by whether partnership or S corporation income is active or passive for purposes of the section 469 passive activity loss rules. Passive income reported here is net of allowed passive losses for the taxable year, which may include prior years' disallowed losses. The tables account neither for whether some losses are carryforwards of prior year's disallowed losses, nor for whether there are disallowed losses that can potentially be used in future years.

<sup>9</sup> Note that the number of taxpayers for all pass-through income is not the total of the number for the five categories of passthrough business income because some taxpayers receive business income of more than one type.

<sup>10</sup> Median income for these business sources rises fairly monotonically, but in most cases there is a slight dip from median income in the first positive AGI class (\$0 to \$50,000) to median income in the second positive AGI class (\$50,000 to \$100,000). See expanded tables in Bull et al. (2010).

<sup>11</sup> Because taxpayers can have multiple types of business income, the losses across all types of income as a share of AGI can add up to a total that is more than any single source.

<sup>12</sup> Bull et al. (2010) provides detail on the matches and shows that they align well with the total number of

S corporation shareholders and the amount of net ordinary income for S corporations published by SOI.

<sup>13</sup> A more complete explanation of the weighting process is provided in the Bull et al. (2010).

<sup>14</sup> Employee payroll excludes officer compensation in an attempt to reflect wages paid other than to the S corporation owners. However, it is likely that not all compensation of owner-employees is reported as Officer Compensation.

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