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# TeleFile--A Progress Report

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**T**eleFile permits individual taxpayers to use touch-tone telephones to file Forms 1040EZ with the Internal Revenue Service (IRS). TeleFile began in 1992 with a pilot in Ohio. The IRS has gradually expanded geographic availability, tested voice signature, added a Spanish script option, and redesigned processing in the subsequent filing seasons. A paperless TeleFile system was piloted nationwide in 1996. The IRS has obtained feedback from taxpayers who have and have not used TeleFile. The 1996 evaluation efforts focused on marketing feedback and TeleFile improvement effort data from taxpayers who used TeleFile.

A business TeleFile feasibility study was designed in 1995 to determine the interest of the business community in using a TeleFile system to file employment and unemployment tax forms via telephone. The results of the survey indicate an appreciable amount of interest in the business community towards using such a system. Of those businesses that thought they would use TeleFile, 73 percent said they would be willing to pay a small fee for the service.

This paper will present a summary of the methodology and results from the 1995 and preliminary 1996 TeleFile surveys and the Business TeleFile feasibility study. Future plans for TeleFile will also be highlighted.

## ■ Executive Summary

TeleFile permits individual taxpayers to use touch-tone telephones to file Forms 1040EZ with the Internal Revenue Service. The 1995 filing season for TeleFile began on January 11, 1995, and ended on April 17, 1995. There were 5,934,000 TeleFile packages mailed to eligible taxpayers in Colorado, Florida, Indiana, Kentucky, Michigan, Ohio, South Carolina, West Virginia, and parts of California and Texas. The system received 682,303 TeleFile returns for a participation rate of 11.5 percent. A Spanish dialogue option was offered for the first time to reduce taxpayer burden. The 1995 Quality Measures Plan assessed reduction of taxpayer burden, production,

compliance, and customer satisfaction.

Except for the peak filing period of January 25 through February 10, 1995, a 100-percent level of service was maintained. The overall level of service was 97.2 percent. Of note, 85.4 percent of the taxpayers who filed using TeleFile did so with only one telephone call. The repeat usage rate for eligible taxpayers in the Central Region increased by 17.1 percent between 1994 and 1995.

The error rate for TeleFile was .25 percent during the 1995 filing season and .02 percent during 1996. This is significantly lower than other filing programs. There are four cases from 1995 under investigation by Criminal Investigation for fraud. Taxpayers who filed by TeleFile were more likely to file a duplicate return than 1040EZ and other electronic filers. This fact was more noticeable in the new TeleFile areas.

To enforce compliance, Telefilers who did not submit the required signature document and W-2's in 1993 were excluded from eligibility for two years. At the conclusion of this filing season, 44 used TeleFile. Seven of these taxpayers remained noncompliant, or 16 percent. This is considerably greater than the overall TeleFile non-compliance rate of 1.43 percent.

Overall, 99 percent of TeleFile users were somewhat or very satisfied with the system. TeleFile users were more satisfied with both the voice and written instructions in 1995 than in 1994. Non-users reported their primary reason for not using TeleFile was the preference for a regular paper tax version. Spanish TeleFile script users cited their primary reason for use was ease of filing and desire for a faster refund.

In 1996, there were 23,860,006 eligible taxpayers who received a TeleFile/1040EZ tax package. The 1996 filing season for TeleFile began on January 11, 1996, and ended on April 15, 1996. The system received 2,887,698 TeleFile returns for a participation rate of 12.1 percent.

In 1996, 99.8 percent of the nonpeak users were somewhat or very satisfied with TeleFile. Of note, 74.3 percent of the taxpayers who filed using TeleFile did so with only one call. This is 11.1 percent less than in 1995.

In 1995, a Business Master File (BMF) TeleFile feasibility study was designed to determine the interest of the business community in using a TeleFile system to file employment and unemployment tax returns via telephone. The study was performed to determine if the IRS should expand the current individual TeleFile system to include business tax returns.

The results of the survey indicate there is an appreciable amount of interest in the business community towards using such a system. A total of 939 telephone surveys was completed for various types of business in the States of Indiana, Kentucky, Michigan, Ohio, and West Virginia. The survey indicates that about 41 percent of the business community would use TeleFile to file their employment or unemployment tax returns with a 95-percent confidence range of +/- 3 percent. Of those businesses that thought they would use TeleFile, 73 percent would be willing to pay a small amount, less than \$2, for the service.

Fifty-seven percent of the surveyed businesses indicated they would not use TeleFile, with the final two percent saying that they did not know if they would use TeleFile. Forty-two percent of the businesses responding "No" to using TeleFile cited their preference to use an accountant or tax preparer to file their tax returns. Twenty-seven percent indicated some other unspecified reason, while 16 percent cited fear of error or lost information.

The first sections of the paper will report on the current status of the individual TeleFile program and some of the future plans. The final sections of the paper will provide some of the detailed business TeleFile survey results.

### ■ Individual TeleFile Profile

The 1995 TeleFile system began on January 11, 1995, and ended on April 17, 1995. Access to TeleFile is restricted to a pre-identified user base extracted from the

IRS individual master file. Risk minimization features factored into the TeleFile profile include a requirement to have a filing history, namely a 1040EZ, and refund checks mailed to the address of record. In summary, the 1995 profile requirements included:

- filing status is single;
- no dependents claimed;
- under the age of 65 on January 1, 1995, and not blind at the end of 1994;
- taxable income less than \$50,000;
- wages only from salaries, tips, and taxable scholarships or fellowship grants, and taxable interest income was \$400 or less;
- no receipt of any advance earned income credit payments; and
- was not a nonresident alien at any time during 1995.

The 1995 TeleFile was available in the States of Colorado, Florida, Indiana, Kentucky, Michigan, Ohio, South Carolina, West Virginia, and parts of California and Texas.

The 1996 filing season began on January 11, 1996. TeleFile was available nationwide in 1996. The profile was the same as in 1995.

### ■ Repeat User Percentage of Eligible Taxpayers

To determine a representative repeat user percentage for TeleFile, we need to account for those taxpayers who become ineligible to use TeleFile during the year between tax filings. Taxpayers who move and taxpayers who use TeleFile but do not mail the required signature document become ineligible. We, therefore, have made several assumptions:

- Eighty percent remain eligible from year to year. The 1994 TeleFile survey data indicated

that 76 percent remain eligible. Hence, 80 percent is conservative.

- Taxpayers who do not mail the signature document and W-2's, noncompliers, are removed from the eligible TeleFile population. Voice signature was tested in Cincinnati in 1993, so there were no Cincinnati noncompliers.
- The same geographic areas are used for year-to-year comparisons.

*1994 Repeat Usage Rate*

TeleFile was only available in the Cincinnati and Cleveland District Offices in 1993. Hence, using the above assumptions to calculate a 1994 repeat user rate for Cincinnati and Cleveland gives the results shown in Table 1.

*1995 Repeat Usage Rate*

In 1994, TeleFile expanded to the entire Central

Region. The 1995 repeat user rate includes the entire Central Region. Using the same assumptions as before gives the results shown in Table 2.

The repeat usage increased by 17.1 percent between 1994 and 1995. This is an improvement of repeat usage between 1994 and 1995 of 38.7 percent. Of note is that 216 of the 1,247 Spanish returns were by 1994 TeleFile users. This is 17.3 percent of the Spanish returns. These filers switched languages to use TeleFile in 1995.

*1996 Repeat Usage Rate*

In 1995, TeleFile was available in the States of Colorado, Florida, Indiana, Kentucky, Michigan, Ohio, South Carolina, West Virginia, and parts of California and Texas. Expanding the 1996 eligible repeat population and updating the same assumptions:

- Taxpayers who do not mail the signature document and W-2's, noncompliers, are removed from the eligible TeleFile population. There were 9,755 noncompliers from the

<u>Table 1: 1994 Repeat User Percentage of Eligible Taxpayers</u>					
<u>Area</u>	<u>1993 Users</u>	<u>1993 Non-Compliers</u>	<u>1994 Est. Eligible</u>	<u>1994 Users</u>	<u>Repeat Percentage</u>
Cincinnati	72,634	0	58,107	25,785	44.4
Cleveland	85,365	407	67,966	29,707	43.7
Ohio	15,999	407	126,074	55,492	44.0

<u>Table 2: 1995 Repeat User Percentage of Eligible Taxpayers</u>					
<u>Area</u>	<u>1994 Users</u>	<u>1994 Non-Compliers</u>	<u>1995 Est. Eligible</u>	<u>1995 Users</u>	<u>Repeat Percentage</u>
Central Region	518,938	3,232	412,565	251,952	61.1

twelve districts in the 1995 TeleFile.

- ❑ Eighty-four percent remain eligible from year to year. Recent Bureau of the Census data between March 1993 and March 1994 report 16.7 percent of the population moved from one place to another.
- ❑ The same geographic areas are used for year-to-year comparisons.

files. This increase of 1.74 percent is a 15.1-percent increase in usage for the same area.

**■ Call Attempts per Person and per TeleFile Return**

1995

The number of call attempts per taxpayer who files a TeleFile return has been of interest the past several

<u>1995 Users</u>	<u>1995 Non-Compliant</u>	<u>1995 Est. Eligible</u>	<u>1995 and 1996 Users</u>	<u>Repeat Percentage</u>
682,303	9,755	564,940	324,246	57.4

There were 324,246 taxpayers who used TeleFile in 1995 and again in 1996. Using the above assumptions to calculate a 1996 repeat user rate gives the results shown in Table 3.

The 1996 repeat user rate by eligible taxpayers for the Central Region and the six additional districts was 57.4 percent. The repeat usage rate for 1995 and 1996 was nearly identical for eligible populations in the same geographic areas. In 1995, the repeat user rate for the Central Region was 61.1 percent.

A repeat percentage near 60 percent may be the highest that we can reasonably expect, given the current use restrictions. A systematic sample of 1,000 non-TeleFile users selected after the 1996 filing season showed that about 34 percent filed by paper or electronically, using a Form 1040 or Form 1040A. An additional 7.1 percent filed their Forms 1040EZ electronically, other than by TeleFile. Thus, less than 60 percent of previous users appear to remain eligible or be willing to use TeleFile the next year as it is currently designed.

Of note, while the repeat usage rate remained about the same, the percent usage rate increased. The usage rate increased from 11.50 percent in 1995 to 13.24 percent in 1996 for the Central Region and six district of-

years. A call attempt requires that a taxpayer has accessed the system by validating his or her Social Security Number (SSN). In 1995, system data showed that a few taxpayers who filed via TeleFile attempted to enter the system up to 64 times. There were 682,303 persons who filed via TeleFile, of whom 1,251 were Spanish-speaking. These numbers include eventual rejects. They made a total of 861,986 calls.

Table 4 shows that 98.9 percent of taxpayers who filed using TeleFile in 1995 completed their work in less than five calls. Of note is that 85.4 percent of taxpayers who filed using TeleFile called only once. The average number of calls by taxpayers who filed using TeleFile with one to four calls was 1.19. Slightly fewer users of the Spanish dialogue completed their business with one call. Seventy-four percent completed filing with one call. However, the percentage completing their work in less than five calls is very close to the overall average of 98.9. The average number of calls for Spanish users with one to four calls was 1.33.

There continues to be a large number of callers into the TeleFile system who are eligible to file but never attempt to file. In 1995, there were 1,221,936 total calls received by the system with 682,303 returns completed. This gives an average number of calls into the system

Table 4: Call Attempts per Person and per TeleFile Return - 1995

System Attempts	Total Returns	Persons Cum	Percent Cum	Number of Calls	Call Cum	* *	Spanish Returns	Persons Cum	Percent Cum	Number of Calls	Call Cum
1	582,452	582,489	85.4	582,452	582,452		931	931	74.4	931	931
2	67,939	650,428	95.3	135,878	718,330		183	1,114	89.0	366	1,297
3	12,518	662,946	97.2	37,554	755,884		51	1,165	93.1	153	1,450
4	11,566	674,512	98.9	46,264	802,148		39	1,204	96.2	156	1,606
5	2,254	676,766	99.2	11,270	813,418		13	1,217	97.2	65	1,671
6	629	677,395	99.3	3,774	817,192		3	1,220	97.5	18	1,689
7	2,657	680,052	99.7	18,599	835,791		13	1,233	98.6	91	1,780
8	562	680,614	99.8	4,496	840,287		3	1,236	98.8	24	1,804

per completed return of 1.79.

### 1996

In 1996, the TeleFile system showed that a few taxpayers who filed via TeleFile attempted to enter the system up to 70 times. In fact, there were four taxpayers who attempted more than 50 times to enter the system.

There were a total of 2,887,698 persons who filed via TeleFile in 1996. This number includes eventual rejects. They made a total of 4,012,005 calls. Table 5 shows that 99.0 percent of taxpayers who filed in 1996 using TeleFile completed their work in less than five calls. In 1995, this percentage was 98.9 percent.

Of note is that 74.3 percent of taxpayers who filed

using TeleFile called once. In 1995, this percentage was 85.4. These values are not sample estimates and have no variance. In other words, 11.1 percent less of the TeleFile users completed their filing with one call attempt. The percentage of filers making three or less calls is 97.2 in 1996 and was the same in 1995. The average number of calls by taxpayers who filed using TeleFile with one to four calls was 1.34. In 1995, this value was 1.19.

It appears from the system data that the same percentage of taxpayers completed their returns in less than four calls in 1996 as in 1995. However, more taxpayers called more than once to complete their returns. Automated survey data independently agree with the system data indicating that about 76 percent of the taxpayers answering the survey called more than once. Of those call-

Table 5: Call Attempts per Person and per TeleFile Return - 1996

System Attempts	Total Returns	Persons Cum	Percent Cum	Number of Calls	Call Cum
1	2,144,565	2,144,565	74.3	2,144,565	2,144,565
2	512,167	2,656,732	92.0	1,024,334	3,168,899
3	150,701	2,807,433	97.2	452,103	3,621,002
4	52,523	2,859,956	99.0	210,092	3,831,094
5	20,915	2,880,871	99.8	104,575	3,935,669
6	9,141	2,890,012	100.1	54,846	3,990,515
7	1,108	2,891,120	100.1	7,756	3,998,271
8	823	2,891,943	100.1	6,584	4,004,855

ing more than once, 40 percent needed to get more information, and about 25 percent wanted to start over.

## ■ Customer Satisfaction Surveys of Individual Taxpayers

### *1995 Automated Customer Satisfaction Survey of TeleFile Users*

In 1995, an automated customer satisfaction survey was used to obtain feedback from a sample of taxpayers who had successfully used TeleFile to file their returns. The survey asked two questions about the written and voice instructions. There were a total of 1,853 responses collected during the 1995 filing season. The automated survey was offered 2,126 times. This is a response rate of 87.2 percent. Overall, 99 percent were somewhat satisfied or very satisfied with TeleFile.

We determined that 88.9 percent were very satisfied with both the written and voice TeleFile instructions. There were 3.7 percent somewhat satisfied with the written instructions and very satisfied with the voice instructions, while 4.5 percent were very satisfied with the written instructions and somewhat satisfied with the voice instructions.

Of note, out of the 1,853 responses, only one was very dissatisfied with both written and voice instructions of TeleFile. Similarly, one other taxpayer was somewhat dissatisfied with both instructions. There were four taxpayers very satisfied with the voice instructions but either very or somewhat dissatisfied with the written.

In 1994, a written survey was mailed to TeleFile users. There were 1,344 responses for a response rate of 68 percent, of which 82.3 percent were very satisfied with the written and 89.5 percent with the voice instructions. Similarly, 13.8 percent were somewhat satisfied with the written and 9.4 percent with the voice instructions. Comparing the two questions from the 1995 automated survey of users to the similar 1994 written survey questions shows that significantly more users were satisfied with both the written and voice instructions in 1995 than in 1994.

### *1996 Automated Customer Satisfaction Survey of TeleFile Users*

There were four questions in the 1996 TeleFile automated survey. The survey was asked of a systematic sample of taxpayers who successfully used TeleFile. To maintain system efficiency and reduce taxpayer time burden, the automated survey was not asked during the two-week peak filing period, January 26 through February 9, 1996. All results, therefore, are for the nonpeak filing period. There were 3,010 offerings of the survey, with a response rate of 95.8 percent.

Ninety-two percent of the nonpeak TeleFile users in 1996 were very satisfied with the system. In 1995, 88.9 percent of the taxpayers were very satisfied with both the written and verbal TeleFile instructions. For 1996, we combined the two 1995 questions into a single general satisfaction question. The 1996 very satisfied rate is significantly greater than the 1995 rate. This comparison assumes the 1995 questions about instructions were equivalent to the more general 1996 questions. The 1995 survey was asked throughout the filing season; while the 1996 survey was asked during nonpeak filing. Approximately half of TeleFile filings occur during the two-week peak time period. Of note, the .2 percent not satisfied with TeleFile in 1996 were all after the peak time period.

A primary target group for TeleFile has always been students. The 1996 surveys were the first attempt to measure this group's participation. In 1996, about one-third of TeleFile users were students.

Written surveys to TeleFile users in 1994 and to non-users in 1995 indicated that about five percent would not use TeleFile again. This year, 99.3 percent of the nonpeak users expressed the intent to use TeleFile next year if eligible. This is significantly better than the 1994 or 1995 results. Part of this difference may be the survey methodology, automated versus written.

Seventy-six percent of the taxpayers who filed with TeleFile during nonpeak called only once. Of the 24 percent who called more than once, 40 percent needed

to get more information. Very few, 3.5 percent, cited disconnection as the cause. There are plans to modify this question for 1997 asking about distractions as a possible reason. The disconnect option will be eliminated.

### *1995 Mailout Nonuser Customer Satisfaction Survey*

A non-TeleFile user survey was mailed to a random sample of eligible taxpayers in 1995. The sample was stratified by Central and non-Central Region. Taxpayers within the Central Region have had the opportunity to use TeleFile for several years, and previous survey results can be compared. In 1995, TeleFile expanded into several new geographic areas. It is not appropriate to compare the overall 1995 results with the overall 1994 results. However, comparisons between the 1994 and 1995 Central Region data and comparison between two 1995 strata are appropriate. Different sampling intervals for the two strata were used, requiring the results to be weighted to produce overall 1995 non-TeleFile user estimates. There were a total of 3,400 surveys mailed, with 1,868 responses and 321 undeliverable surveys returned by the post office. The overall response rate was 60.7 percent. Missing or blank responses to the general question asking why taxpayers did not use TeleFile were interpreted as no opinion and included in the total responses. Table 6 and Table 7 are the non-TeleFile user surveys, with the number of responses from the non-Central and Central Regions, respectively. The weighted percentages, standard error (se), and resulting 90-percent confidence interval (CI) range follow in Table 6.

### *1995 Central Region Nonuser Survey*

Testing for significant differences between the 1995 and 1994 TeleFile nonuser surveys mailed to eligible taxpayers within the Central Region gives the results shown in Table 7.

In 1995, significantly fewer taxpayers in the Central Region population of non-TeleFile users did not use TeleFile because they thought they would have to pay earlier if they used it, but more wanted a "regular version" of their tax returns compared to 1994. There is no evidence of different age or education distributions of the TeleFile nonusers between the 2 years for the Cen-

tral Region.

Of note are the 4.8 percent who were eligible to use TeleFile in 1995 and used it last year but did not in 1995. The 1994 survey of taxpayers who successfully used TeleFile asked if they would use TeleFile next year. About 6.5 percent of the respondents indicated they would not. This year's response by nonusers for the same region is consistent with last year's response by users. The IRS is focusing on why eligible taxpayers do not want to repeat using TeleFile.

The principal reason for nonusage of TeleFile in 1994 and 1995 appears to be the preference for a paper or "regular" version of the tax form. We looked at responses to the question of nonuse to determine if age or education influenced the preference for a paper copy.

We used a chi-square analysis,  $\chi^2$ , analysis to discern whether preference for the regular version of the tax return was independent of age. We tested the 1994 and 1995 data to compare findings, using the following  $\chi^2$  test statistic:

$$\chi^2 = \frac{\sum(O - E)^2}{E}, \quad \text{where } O \text{ is the observed, and } E \text{ is the total of expected TeleFile responses.}$$

The objective of this test is to determine whether the different populations are distributed independently of one another with respect to age or education. Testing the 1994 data for independence gives the test statistic  $\chi^2 = 3.341$ . The critical value for our test with (4-1)\*(2-1) degrees of freedom is  $\chi^2_{0.05,3} = 7.815$ . Our statistic  $\chi^2 = 3.341$  falls within the critical region. Hence, we cannot reject the null hypothesis of no difference and conclude that the preference for the regular version appears to be independent of age. In other words, age does not seem to affect the preference for the regular version of the tax form based on the 1994 TeleFile Central Region non-user data. Our calculated test statistic for the 1995 data is  $\chi^2 = 2.769$ . Therefore, we again fail to reject the null hypothesis. That is, preference for the regular version based on the 1995 survey data is independent of age.

Performing a chi-square test to determine if the pref-

Table 6: Percent Distribution of Written Responses by Non-TeleFile Users

Total Responses	1,868		
Response Rate	60.7 percent		
<u>Characteristic</u>	<u>Percent</u>	<u>se</u>	<u>90% CI</u>
No touchtone phone	15.1	0.9	1.5
Wanted EIC	4.4	0.6	1.0
Used TeleFile before ?	3.9	0.6	0.9
Need to mail return:			
very influenced	10.2	0.9	1.4
some influence	14.2	1.0	1.6
no influence or missing	75.6	1.2	2.0
Why did not use:			
Don't like autosystems	41.9	1.4	2.2
Buttons on handset	27.7	1.2	2.0
Slow refund	15.9	1.0	1.7
Want to delay payment	4.7	0.5	0.8
Confidentiality concern	27.4	1.2	2.0
Don't like dealing w/IRS	16.9	1.0	1.7
Prefer regular version	77.9	1.1	1.8
<u>Single most important reason for nonuse:</u>			
Don't like autosystems	12.9	0.9	1.5
Buttons on handset	1.7	0.4	0.6
Slow refund	2.7	0.5	0.7
Want to delay payment	1.9	0.3	0.5
Confidentiality concern	4.4	0.6	1.0
Don't like dealing with IRS	2.7	0.4	0.7
Prefer regular version	52.9	1.4	2.3
Missing	20.8		
Age:			
<18	3.6	0.6	0.9
18-24	45.1	1.4	2.3
25-34	25.9	1.2	2.0
35 >	25.4	1.2	2.0
Schooling:			
High school or less	31.8	1.3	2.2
Some college	46.7	1.4	2.3
College Degree	21.5	1.2	1.9

Eligible taxpayers outside the Central Region who did not use TeleFile were asked if they would use TeleFile with their State returns. There were 434 responses as follows:

	<u>Percent</u>	<u>se</u>	<u>90% CI</u>
Yes	26.1	2.0	3.2
No	34.0	2.1	3.5
Do not file State return	39.9	2.2	3.6



Table 7: Results from 1994 and 1995 Central Region non-TeleFile User Survey

	<u>1995</u>			<u>1994</u>		
Total Responses		993		852		
Response Rate		66.3		48.3		
<u>Characteristic</u>	<u>n</u>	<u>Percent</u>	<u>se</u>	<u>Percent</u>	<u>se</u>	<u>t or <math>\chi^2</math> statistic for difference</u>
No touchtone phone	186	19.6	1.3	21.4	1.7	- 0.8
Wanted EIC	39	5.1	0.8			
Used TeleFile Before ?	36/747	4.8	0.8			
Need to Mail Return:						
Very influenced	90	12.1	1.2			Question not asked in 1994. 1995 was first year without voice signature feature.
Some influence	98	13.2	1.2			
No influence or missing	554	74.7	1.6			
Why did not use:						
Don't like autosystems	335	43.6	1.8	37.6	2.2	2.1 *
Buttons on handset	203	26.4	1.6	23.7	1.9	1.1
Slow refund	132	17.2	1.4	17.2	1.7	0.0
Want to delay payment	10	1.3	0.4	7.9	1.2	- 5.2 *
Confidentiality concern	223	29.0	1.6	29.9	2.1	- 0.3
Don't like dealing w/IRS	123	16.0	1.3	16.2	1.7	- 0.1
Prefer regular version	650	84.6	1.3	61.8	2.2	9.0 *
Single most important reason for nonuse:						
Don't like autosystems	96	12.5	1.2			Question not asked in 1994.
Buttons on handset	14	1.8	0.5			
Slow refund	21	2.7	0.6			
Want to delay payment	0	0.0	0.0			
Confidentiality concern	44	5.7	0.8			
Don't like dealing with IRS	15	2.0	0.5			
Prefer regular version	449	58.5	1.8			
Missing	129	16.8				
Age:						
<18	38	5.0	0.8	2.2	0.6	$\chi^2 = 2.369$
18-24	337	44.4	1.8	45.5	2.1	
25-34	173	22.8	1.5	26.6	1.9	
35 >	211	27.8	1.6	25.7	1.9	
Schooling:						
High school or less	259	36.3	1.8	26.7	2.0	$\chi^2 = 4.859$
Some college	317	44.4	1.9	47.6	2.2	
College Degree	138	19.3	1.5	25.7	2.0	

\* = significant at the 90-percent confidence level

erence for the regular version is independent of education gives similar results to the test for age. Our test statistics,  $\chi^2_{0.05,2} = 0.104$  for 1994 and 2.887 for 1995, are not within the critical region of 5.991. Hence, we cannot reject the null hypothesis. The preference for the regular version of the tax form appears to be independent of education level for both years.

The 1995 TeleFile nonuser survey asked what the most important reason for nonuse was. There were seven possible response categories: dislike of automated systems; lack of push buttons on the phone; thought TeleFile would slow the refund; desire to delay tax payment; concern about confidentiality; dislike in dealing with IRS; and preference for a regular paper version. We tested the 1995 data to determine if the preference for the regular version of the tax form, as the most important reason for nonuse, was independent of age versus the alternative that age was a factor. There were four age categories and six nonuse categories with responses. These possible answers give 15 degrees of freedom. Our calculated test statistic,  $\chi^2 = 33.527$ , does not fall in the critical region. Hence, we must reject the null hypothesis of no influence and conclude that age has some influence on the most important reason for non-use. The under-24 age group preferred the regular version of the tax return more than any other age group.

We performed a similar test on the education variable. Education did not have an influence on the preference for the regular version.

### *1995 Central/non-Central Region Nonuser Comparison*

Comparing 1995 non-TeleFile user responses from the Central Region to nonusers outside the Central Region and testing for differences give the results shown in Table 8.

In brief, significantly more taxpayers were no longer eligible to use TeleFile outside the Central Region, but less had rotary phones compared to the Central Region. More taxpayers in the Central Region wanted a "regular version" of their tax returns, while more taxpayers outside the Central Region did not use TeleFile in an at-

tempt to delay their tax payments. In general, there is no evidence of difference in the nonuser populations' mailing requirement reactions, ages, or education levels between the two strata (Quirin, 1978).

### *1996 Mailout User Survey*

In 1996, a survey was mailed to a random sample of TeleFile users for marketing evaluation, TeleFile improvement priorities, and TeleFile instruction packet layout preferences. There were 3,291 surveys mailed, with a response rate near 79 percent.

Preliminary results from this survey indicate that slightly more than 25 percent of the TeleFile users expressed the opinion that it was very important to receive the 1040EZ information with the TeleFile packet. One-third thought this information was somewhat important to receive, and one-third thought it was not.

Nearly 85 percent of the TeleFile users first learned about TeleFile from the tax package. About 60 percent thought television would be the best way to tell people about TeleFile. Nearly half of the TeleFile users felt the ability to file their State refunds via TeleFile was the most important new feature to add to TeleFile.

Demographically, about 25 percent of the TeleFile users were age 20 or younger; 30 percent age 21 to 25; 30 percent age 26 to 40; and the remaining 15 percent age 41 to 65.

### ■ **Individual Duplicate and Amended Tax Returns**

Two measures in the measurement plan call for a comparison to evaluate if the percentage of taxpayers who file via TeleFile and then file an amended or duplicate return is significantly different from the percentage of those who originally file via another similar method, such as the 1040EZ and ELF. Each duplicate or amended return has a cost to the IRS associated with it. The analysis of this measure was stratified by continuing TeleFile areas from the Cincinnati and Atlanta Service Centers and new TeleFile areas from the Austin Service Center. There was a total of 5,254 duplicate/amended

Table 8: Comparison of Central and Non-Central Regions Non-TeleFile User Survey outside

	<u>Central Region</u>			<u>Central Region</u>			
	<u>n</u>	<u>Percent</u>	<u>se</u>	<u>n</u>	<u>Percent</u>	<u>se</u>	<u>t or <math>\chi^2</math> statistic for difference</u>
Total Responses	993			875			
Response Rate	66.3			55.3			
<u>Characteristic</u>	<u>n</u>	<u>Percent</u>	<u>se</u>	<u>n</u>	<u>Percent</u>	<u>se</u>	
Not eligible (from 1994)	200/918	21.8	1.4	244	30.3	1.6	- 4.0 *
No touchtone phone	186	19.6	1.3	57	9.8	1.2	5.5 *
Wanted EIC	39	5.1	0.8	19	3.6	0.8	1.3
Used TeleFile before ?	36/747	4.8	0.8	16/532	3.0	0.7	1.7 *
Need to mail return:							
Very influenced	90	12.1	1.2	42	8.2	1.2	$\chi^2 = 2.196$
Some influence	98	13.2	1.2	78	15.2	1.6	
No influence or missing	554	74.7	1.6	392	76.6	1.9	
Why did not use:							
Don't like autosystems	335	43.6	1.8	223	40.2	2.1	1.3
Buttons on handset	203	26.4	1.6	161	29.0	1.9	- 1.0
Slow refund	132	17.2	1.4	81	14.6	1.5	1.3
Want to delay payment	10	1.3	0.4	45	8.1	1.2	- 5.5 *
Confidentiality concern	223	29.0	1.6	143	25.8	1.9	1.3
Don't like dealing w/IRS	123	16.0	1.3	99	17.8	1.6	- 0.9
Prefer regular version	650	84.6	1.3	394	71.0	1.9	5.9 *
Single most important reason for nonuse:							
Don't like autosystems	96	12.5	1.2	74	13.3	1.4	$\chi^2 = 12.115$
Buttons on handset	14	1.8	0.5	9	1.6	0.5	
Slow refund	21	2.7	0.6	15	2.7	0.7	
Want to delay payment	0	0.0	0.0	21	3.8	0.8	
Confidentiality concern	44	5.7	0.8	17	3.1	0.7	
Don't like dealing with IRS	15	2.0	0.5	19	3.4	0.8	
Prefer regular version	449	58.5	1.8	262	47.6	2.1	
Missing	129	16.8		138	24.9		
Age:							
<18	38	5.0	0.8	11	2.1	0.6	$\chi^2 = 6.580$
18-24	337	44.4	1.8	242	45.8	2.2	
25-34	173	22.8	1.5	154	29.2	2.0	
35 >	211	27.8	1.6	121	22.9	1.8	
Schooling:							
High school or less	259	36.3	1.8	140	27.2	2.0	$\chi^2 = 4.298$
Some college	317	44.4	1.9	253	49.1	2.2	
College degree	138	19.3	1.5	122	23.7	1.9	

\* = significant at the 90-percent confidence level

returns by TeleFile filers and 22,545 duplicate/amended returns by 1040EZ/ELF filers.

A systematic random sample of about 350 was selected from each of the four universes, continuing and new areas by type of return. The samples were examined for differences in their population proportions. The objective of the test is to determine whether the different populations are distributed independently of one another with respect to the type of return filed. That is, we assume that there is no difference in the two distributions and construct a contingency table of expected values from the pooled proportions,  $p$ . A few of the sampled cases were out of scope for this measure, that is, the wrong taxpayer or tax year.

*Continuing Areas--Cincinnati and Atlanta Service Centers*

<u>Observed</u>		<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	p1	221	194
Amended	p2	104	104
Wrong TP/Year		12	31
Total		337	329
Pooled proportion: p1 = 0.6231; p2 = 0.3123			
<u>Expected</u>		<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns		209.99	205.01
Amended		105.25	102.75
Wrong TP/Year		21.76	21.24
Total		337	329

Performing a chi-square,  $\chi^2$ , analysis for independence gives the test statistic  $\chi^2 = 10.06$ . The critical region with  $(3-1)*(2-1)$  degrees of freedom is  $\chi^2_{0.05,2} = 5.991$ . Our statistic  $\chi^2 = 10.06$  does not fall in the critical region. Hence, we must reject the null hypothesis of no difference and conclude that the filing method does have some effect on a person filing a duplicate or amended return from the continuing areas.

Examining further to determine if there is a statistical difference between the percentage of taxpayers who filed amended or duplicate returns based on their initial 1040EZ filing methods gives the following:

<u>Proportions</u>	<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	0.6558	0.5897
Amended	0.3086	0.3161
Wrong TP/Year	0.0356	0.0942
Total	1.00	1.00
<u>Standard error</u>	<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	0.0259	0.0271
Amended	0.0252	0.0256

The objective of this test is to determine if there is evidence of a difference in the proportion of taxpayers filing duplicate or amended returns based on their initial types of filing. If we assume there is no difference and set our null hypothesis as no difference, we obtain the following test statistics,  $z$ :

$$z_{\text{Duplicate Returns}} = 1.76$$

$$z_{\text{Amended}} = -0.21$$

Our test statistic for duplicate returns is outside the critical region of 1.645 at 90-percent confidence. This indicates there is evidence to suggest that the proportion of taxpayers filing duplicate returns from the continuing TeleFile areas is affected by their initial filing methods. More specifically, taxpayers in the continuing TeleFile areas filing via TeleFile are more likely to file duplicate returns.

However, the test statistic for amended returns is not outside the critical region. There is no evidence to suggest a difference in the proportion of taxpayers filing amended returns. In other words, taxpayers using TeleFile in the continuing areas do not seem to be filing their returns prior to receiving all their tax documentation in a proportion significantly different than other 1040EZ filers.

The results from the 1995 continuing areas are consistent with the results from 1994 for the same areas.

The 1995 z statistics are less significant than the 1994 statistics. The 1994 z statistics were 4.72 and 1.12 for duplicate and amended returns, respectively.

*New Areas--Austin Service Center*

<u>Observed</u>		<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	p1	213	147
Amended	p2	161	176
Wrong TP/Year		3	16
Total		377	339

Pooled proportion:	p1	0.5028	
	p2	0.4707	

<u>Expected</u>		<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns		189.55	170.47
Amended		177.44	159.56
Wrong TP/Year		10.00	9.00
Total		377	339

Performing a chi-square,  $\chi^2$ , analysis for independence gives the test statistic  $\chi^2 = 19.70$ . The critical region for our test with (3-1)\*(2-1) degrees of freedom is  $\chi^2_{0.05,2} = 5.991$ . Our statistic  $\chi^2 = 19.70$  does not fall in the critical region. Hence, we must reject the null hypothesis of no difference and conclude that the filing method does have some effect on a person filing a duplicate or amended return from the new TeleFile areas.

Examining further to determine if there is a statistical difference between the percentage of taxpayers who filed amended or duplicate returns based on their initial 1040EZ filing methods gives the following:

<u>Proportions</u>	<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	0.5650	0.4336
Amended	0.4271	0.5192
Wrong TP/Year	0.0080	0.0472
Total	1.00	1.00

<u>Standard error</u>	<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	0.0255	0.0269
Amended	0.0255	0.0271

The objective of this test is to determine if there is

evidence of a difference in the proportion of taxpayers filing duplicate or amended returns based on their initial types of filing. If we assume there is no difference and set our null hypothesis as no difference, we obtain the following test statistics, z:

$$z_{\text{Duplicate Returns}} = 3.54$$

$$z_{\text{Amended}} = -2.47$$

Our test statistics for duplicate and amended returns are outside the critical region of 1.96 at 95-percent confidence. This indicates there is evidence to suggest that the proportion of taxpayers in the new TeleFile areas filing duplicate and amended returns is affected by their initial filing methods. In other words, taxpayers in new 1995 TeleFile areas who filed via TeleFile are more likely to file duplicate returns and less likely to file amended returns than other 1040EZ and ELF filers. The results from the 1995 new TeleFile areas are similar to the results from the 1994 Central Region. In other words, taxpayers in new TeleFile areas appear more likely to file duplicate and amended returns than in areas more familiar with TeleFile.

*Total 1995 TeleFile--Weighted Results*

Different sampling intervals for the two areas were used to select the sample returns. This requires the individual area results to be weighted to produce overall 1995 TeleFile estimates.

<u>Weighted observed</u>		<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	p1	3,376	11,603
Amended	p2	1,712	9,327
Wrong TP/Year		166	1,615
Total		5,254	22,545

Pooled proportion: p1 = 0.5388; p2 = 0.3971

<u>Weighted expected</u>		<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns		2,831.02	12,147.94
Amended		2,086.46	8,953.02
Wrong TP/Year		336.52	1,444.04
Total		5,254	22,545

Performing a chi-square,  $\chi^2$ , analysis for independence gives the test statistic  $\chi^2 = 318.68$ . The critical region for our test with (3-1)\*(2-1) degrees of freedom is  $\chi^2_{0.05,2} = 5.991$ . Our statistic is far outside the critical region. Hence, we must reject the null hypothesis of no difference and conclude that filing method does have some effect on a person filing a duplicate or amended return.

Examining further to determine if there is a statistical difference between the percentage of taxpayers from the 1995 TeleFile who filed amended or duplicate returns based on their initial 1040EZ filing methods gives the following:

<u>Proportions</u>	<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate returns	0.6425	0.5147
Amended	0.3259	0.4137
Wrong TP/Year	0.0316	0.0716
Total	1.00	1.00
<u>Standard error</u>	<u>TeleFile</u>	<u>Non-TeleFile</u>
Duplicate Returns	0.0230	0.0271
Amended	0.0288	0.0294

The objective of the test is to determine if there is evidence of a difference in the proportion of taxpayers filing duplicate or amended returns based on their initial type of filing. If we assume there is no difference and set our null hypothesis as no difference, we obtain the following test statistics, z:

$$z_{\text{Duplicate Returns}} = 3.60$$

$$z_{\text{Amended}} = -2.13$$

Our test statistics for duplicate and amended returns are outside the critical region of 1.96 at 95-percent confidence. This indicates there is evidence to suggest that the proportion of taxpayers filing duplicate and amended returns is affected by their initial filing methods. More specifically, taxpayers who file using TeleFile are more likely to file duplicate returns and less likely to file amended returns than 1040EZ and ELF filers. The lower amended percentage may be partially explained by the TeleFile eligibility requirement, which results in somewhat simpler tax returns. The more general 1040EZ population includes more complicated returns (Casady,

1995).

The weighted 1995 estimate of duplicate and amended returns can be used to estimate the overall percentage of duplicate and amended returns for both TeleFile and non-TeleFile users. The non-TeleFile universe count is from the three service centers that process returns for areas that were eligible to use TeleFile in 1995.

	<u>TeleFile</u>	<u>Non-TeleFile</u>
Est. duplicate returns	3,376	11,603
Est. amended returns	1,712	9,327
Total returns filed	682,303	10,937,000*
<u>Overall</u>		
Percentage duplicate	.49	.11
Percentage amended	.25	.09

\* The total number of non-TeleFile returns for this comparison is the total number of 1040EZ paper and ELF returns processed by the Cincinnati, Atlanta, and Austin Service Centers.

The overall percentage difference in the number of duplicate returns, .49 to .11, is consistent with previous statistical comparisons and historical data showing that taxpayers who file using TeleFile are more likely to file duplicate paper returns.

However, the indication that TeleFile users file more amended returns than non-TeleFile users is not consistent with the 1995 statistical comparison or previous year's test. There are several possible explanations for this apparent discrepancy:

- The numbers of amended TeleFile and non-TeleFile returns are both estimates. There is some variation associated with all estimates. The TeleFile sample size is very small compared to the non-TeleFile universe. The actual difference between .25 and .09 is very small.
- The non-TeleFile return universe includes all

the districts within the service center. TeleFile was not available throughout the Atlanta and Austin Service Center boundaries. The TeleFile districts may not be completely representative of the remaining districts.

- All statistical tests are calculated with a percent of confidence. Typically, 95-percent confidence is used. That is, we are 95-percent sure that the test is detecting a true difference. This may be an example of the five percent of cases when the test detects a nonexistent difference.

In summary, the data appear to be nonconclusive for individual amended returns (Quirin, 1978).

### ■ Business TeleFile Feasibility Study

The Business Master File (BMF) TeleFile Feasibility Study was designed to determine the interest of the business community in using a TeleFile system to file employment and unemployment tax returns via telephone. The study was commissioned by Information Systems in conjunction with Taxpayer Services, Cincinnati Service Center and Statistics of Income of the Internal Revenue Service. The Behavioral Research Laboratory of the Bureau of Labor Statistics (BLS) and the Survey Research Center (SRC) of the University of Michigan were both contractors on the project.

The results of the survey indicate that there is an appreciable amount of interest in the business community towards using such a system. A total of 939 telephone surveys were completed involving various types of businesses in the States of Indiana, Kentucky, Michigan, Ohio, and West Virginia that file taxes in the IRS Central Region. The survey indicates that about 41 percent of the business community would use TeleFile to file their employment or unemployment tax returns. A 95-percent confidence interval for the number of businesses interested in TeleFile is 38 percent to 44 percent. Of those businesses that thought they would use TeleFile, 73 percent said they would be willing to pay a small fee (no more than \$2) for the service. Fifty-six percent of the willing businesses would like to see Form 941,

*Employer's Quarterly Federal Tax Return*, developed first. Fourteen percent would like to see Form 940, *Employer's Annual Federal Unemployment Tax Return*, developed first, and 22 percent said both. For purposes of this study, the business community consists of corporations, partnerships, nonprofit/not-for-profit organizations, and sole proprietorships with a Form 940; 940EZ; 941; 943, *Annual Return of Withheld Federal Income Tax*; or 945, *Employer's Annual Tax Return for Agricultural Employees*, filing requirement.

The remaining 59 percent of the surveyed businesses indicated either that they would not use TeleFile or that they did not know whether they would use TeleFile (only 2 percent). The main reason why businesses would not be interested in TeleFile is that they prefer to use an accountant or tax preparer to file their tax returns. Forty-two percent of the businesses responding "No" to using TeleFile cited this reason, 27 percent indicated some other unspecified reason, and 16 percent cited fear of errors or lost information.

Some characteristics of the survey respondent businesses are:

- A little over 80 percent of the respondent businesses have 20 or fewer employees;
- The median number of employees is five;
- About 50 percent of the respondent businesses are corporations, 30 percent are sole proprietors, and the remaining 20 percent are partnerships or non-/not-for-profit organizations;
- Nearly 43 percent of the corporations, 35 percent of the sole proprietors, 41 percent of the partnerships, and 51 percent of "other" businesses responded "Yes" to using TeleFile;
- Only 34 of the 939 (less than 4 percent) responses came from third parties;
- Almost 15 percent of the businesses responded that a secretary or bookkeeper is

primarily responsible for filing the tax returns, 31 percent responded it is the owner or manager, 41 percent said they use a professional accountant or tax preparer, 1 percent responded they use a main office or corporate accounting system, and the remaining 12 percent said they use some "other" filing method;

- A little over half of the businesses that use a secretary or bookkeeper to file their taxes responded "Yes" to using TeleFile;
- About 43 percent of the businesses that use the owner or manager to file their taxes responded "Yes" to using TeleFile;
- Only 35 percent of the businesses that reported using professional accountants or tax preparers responded "Yes" to using TeleFile;
- Seven out of the 13 businesses that reported using a main office or corporate account responded "Yes" to using TeleFile;
- Nearly 40 percent of the businesses that use some "other" method to file their taxes responded "Yes" to using TeleFile;
- A little over a third (37 percent) of the businesses responded that they own a computer system; and
- Owning a computer system did not have an effect on whether the business would use TeleFile.

### ■ Sample Design for BMF Feasibility Study

Although the population of interest is all U.S. businesses that file Form 940 or 940EZ (Unemployment FUTA taxes), Form 941 (Employment taxes), Form 943, or Form 945, the target population was limited to all U.S. businesses filing in the IRS Central Region. The Central Region consists of the States of Indiana, Kentucky, Michigan, Ohio, and West Virginia. This was done to

limit the scope of the work involved in the survey. The 1993 list of valid Employer Identification Numbers (EIN's), maintained by CSC, was used to draw the sample. The list consisted of only EIN's and did not have any identifying information available but was broken down by IRS district. Only those districts in the Central Region were sampled. All identifying information for sampled EIN's was obtained manually from the IDRS system via CSC personnel.

The following assumptions were made to design the sample:

- The survey would be administered by telephone.
- There were sufficient resources to contract out the work associated with linking names and addresses to telephone numbers, administering the telephone survey, data collection, and a limited amount of data analysis.
- The main estimate of interest is  $p =$  the percent of the population interested in using a TeleFile system. In this case,  $p = .5$  provides the most conservative estimate of the sample size (Cochran, 1977).
- The degree of precision desired was set at .05 with 90-percent confidence.
- The survey would have 10-12 questions at most (BLS).
- The expected nonresponse rate would be 50 percent or less, using 5 - 6 callbacks per number and recontacts for refusals (BLS).
- The expected out-of-business rate is approximately 30 percent (Hinkins and Scheuren, 1987).
- The population size of valid EIN's for the Central Region is 921,343 (CSC).
- All EIN's selected for the sample will be surveyed, regardless of size, type, or number



of employees.

- Name and address information would be obtained via a manual process on IDRS for all sample-selected EIN's. Staff in CSC was available to do the work between December 19, 1994, and January 13, 1995.

Taking all of the above assumptions into account, a systematic sample of size  $n = 3,020$  was drawn from the list of valid Central Region EIN's. The random start for the systematic sample was 142, with a skip interval of 305, based on  $N = 921,343$ .

The sample size of  $n = 3,020$  was determined using formula (4.1) in Cochran. The formula provides a sufficient sample size for a desired precision of .05, with 90-percent confidence and assuming  $p = .5$ . The other constraints were then factored in. Formula (4.1) gives a final sample size of  $n = 1,111$ . The actual sample size was reduced to 900 due to contract resources. (The reduced sample size is still adequate to meet the desired precision level.) Continuing to work backwards with the remaining constraints, an initial sample size of 3,020 \* .3 for out-of-business returns estimated 2,114 active businesses in the sample. The actual number of eligible businesses in the sample turned out to be 2,073. An estimated response rate of 50 percent was to provide  $2,114 * .5 = 1,046$  responses. The actual contract was worded to obtain a total of 900 responses. Thus, the response rate cannot be directly calculated since the surveying was cut off after the 900 responses were reached. Although this should not affect the precision of the estimates, there are special concerns associated with this method addressed in the next section.

### ■ Characteristics of the Business Study Population, Sample, and Survey Respondents

For this study, it is very important that the population, sample, and survey respondents all have the same underlying characteristics. The study is designed to determine the interest in the business community in using a TeleFile system. If, for some unknown reason, the particular set of respondents who answered the survey differed from the sample and population in general, then

the results from the survey could not be extended to the population. For example, if all survey respondents happened to be corporations and the response to TeleFile was positive, this would not necessarily mean that all business types would provide a favorable response to TeleFile. In fact, sole proprietors and partnerships could have a very different viewpoint. It could be very costly for the Service to develop a system that was not favored by a substantial portion of the whole business community.

#### *Population*

The target population was restricted to businesses filing in the Central Region. Businesses, including corporations, partnerships, non/not-for-profit organizations, and sole proprietorships, in the Central Region may vary slightly from the overall distribution of businesses in the U.S. During the planning stages, it was decided that these differences would be disregarded. The assumptions were that 1) if there were no interest in TeleFile in Central Region, there would probably be no interest nationwide in the business community, and 2) if there were interest in TeleFile, then the amount of interest might vary, but 3) if there were enough interest, then there would be enough interest nationwide. The distribution and characteristics of businesses in the Central Region could be compared to businesses nationwide with appropriate Master File data. These data are currently not available in a timeframe that would fit this project.

#### *Sample*

The sample of 3,020 EIN's was drawn systematically from the list of valid EIN's in the Central Region. Systematic samples can have problems, but the available data do not seem to indicate any. The distribution of business types seems reasonable. About half of the sample is of corporations filing a Form 1120, another 30 percent are sole proprietors filing a Form 1040, and the remaining 20 percent are partnerships filing a Form 1065 or a nonprofit filing a Form 990. All eligible businesses had a filing requirement for either one or both of a Form 940 or 941.

The businesses in the sample also seem to be distributed geographically in reasonable proportions. Nearly

two-thirds of the sample businesses are split evenly between Ohio and Michigan. Indiana comprises about 20 percent of the sample, Kentucky comprises about 12 percent, and the rest are located in West Virginia. There are no other characteristic variables available in the study to make comparisons. Based on these two variables, there is no indication that the systematic sample is not representative of the population.

### *Survey Respondents*

In most survey situations, the distribution of the survey respondents will be exactly like the sample unless there is a significant amount of nonresponse. This is not necessarily the case in this survey. Although there is no nonresponse per se in this survey, there is some concern that the 939 respondents may not have the same characteristics as the sample. This is because the survey ended before all eligible businesses had been contacted or followed up on. For example, if all sole proprietors answered the survey on the first phone call, but corporations took four phone calls to answer the survey, then it could turn out that more survey respondents are sole proprietors.

The distribution of business types among the survey respondents seems to follow the same distribution as the entire sample. About 50 percent of the respondents were corporations, 30 percent were sole proprietors, and the remaining 20 percent were partnerships and nonprofits. Due to the data restrictions that the Survey Research Center (SRC) placed on the survey respondent data base, the geographic distribution of the respondents cannot be matched to the sample. However, there are no indications that SRC intentionally selected specific types of cases for the respondent file. That is, it seems that SRC tried to preserve the distribution of the sample during the telephone calling and did not call all corporations first, or all businesses in Kentucky last, for example.

In conclusion, there is no evidence to suggest that the results from the survey do not represent those of the U.S. business community in general. Since the survey indicates about 41 percent of the businesses in the Central Region would be willing to use TeleFile to file their employment or unemployment taxes, there should be a significant percentage of U.S. businesses nationwide that

would use a TeleFile system.

## ■ **Business Survey Results**

In addition to the basic questions of usage of TeleFile and why and why not a business would use TeleFile, the survey asked questions about who filed the business taxes, how many years in business, number of employees, and if the business owned a computer system for filing taxes. Some of the results from the other questions are summarized here. In general, there are no surprising results from the survey.

For purposes of all analyses in this report, the categories of "Don't know" or "Refused to answer" were put together with the "No" response to using TeleFile. This was done so that a clean comparison of a "Yes" response to using TeleFile could be used against a not Yes response to using TeleFile.

### *Number of Years in Business*

Table 9 shows the distribution of the number of years in business for the survey respondents. The number of years in business ranged from 1 to 97, with the median age of the respondent businesses at about 16 years, although about 15 percent are 5 years or younger, and 35 percent are 10 years or younger.

### *Number of Employees*

Table 10 shows the distribution of the number of employees for the businesses that responded. The number of employees ranged from 1 to 8,000. Thus, the survey did get information from some very large businesses. There were 4 businesses with 1,500 or more employees and 6 businesses with between 500 and 1,000 employees. On the other hand, nearly 20 percent of the businesses had 2 or fewer employees, and nearly 70 percent had fewer than 11 employees, so the sample consists mostly of smaller businesses. This is to be expected since the population consists of mostly smaller businesses.

### *Type of Business by TeleFile Response*

Responding businesses were asked if they were a

Table 9

No. Year in Bus.	Frequency*	Percent	Cum. Percent
1 - 5	134	14.8	14.8
6 - 10	175	19.3	34.1
11 - 15	127	14.0	48.2
16 - 20	95	10.5	58.7
21 - 30	127	14.0	72.7
31 - 49	111	12.3	85.0
50+	136	15.0	100.0

\* 34 respondents did not answer, 5 respondents not in data base for table.

Table 10

No. Employees	Frequency	Percent	Cum. Freq.	Cum. Percent
1 - 2	173	18.4	173	18.4
3 - 4	209	22.3	382	40.7
5 - 6	142	15.1	524	55.8
7 - 10	115	12.2	639	68.1
11 - 20	117	12.5	756	80.5
21+	183	19.5	939	100.0

Note that all responding businesses answered this question.

Table 11

## Type of Business

Use TeleFile	Sole Prop.	Partnership	Corporation	Other	Total
Yes	96	26	207	56	385
No	180	38	280	54	552
Total	276	64	487	110	937*

\* 2 businesses did not respond to this question

sole proprietor, partnership, corporation, or other, which includes all non and not-for-profit organizations. Table 11, a two-way table, shows the distribution of responses to using TeleFile based on type of business. The  $\chi^2$  statistic follows.

A  $\chi^2 = 9.22$  with three degrees of freedom has a p-value  $< .05$ , which indicates that the type of business does have an effect on the response to using TeleFile. The survey data seem to indicate that sole proprietors are somewhat less likely to use TeleFile than partner-

ships, corporations, or "other" business types.

*Third-Party Respondents*

Before the survey was taken, there was some concern from BLS that the survey would be answered by a third party, such as a tax preparer. This was based on previous experience with another IRS study dealing with voucher payments. However, the instructions to SRC were to try to get someone within the business itself to answer the survey and to only go to the third party as a last resort. Consequently, only 34 of the 939 responses came from third parties, and the results indicate that the third parties responded to using TeleFile in the same way that someone within the business would have responded. Thus, the 34 third-party responses do not have to be pulled out of the analysis. They are thrown in with the rest of the results for all other questions.

*Reasons Not To Use TeleFile*

Five hundred fifty-two businesses answered "No" to using TeleFile. Six different options were included in the survey for reasons not to use it. The results are provided in Table 12.

Clearly, the biggest reason cited not to use TeleFile was because the business preferred to use a tax preparer. Unfortunately, the data are not detailed enough to determine the next most popular reason since "Other" was the next most-cited reason at 27.2 percent.

A more detailed analysis of reason by type of business did not indicate that there was a difference between business types in why not to use TeleFile. That is, across all business types, the biggest reason for not using TeleFile was the preference to use a tax preparer, although sole proprietors did seem to cite fear of errors slightly more often than other business types.

*Number of Years in Business by TeleFile Response*

During the design stage, there was a conjecture that newer or smaller businesses might be more likely to use TeleFile. Table 13, a two-way table of number of years in business by TeleFile usage, is given below along with the  $\chi^2$  statistic.

A  $\chi^2 = 4.6$  with six degrees of freedom has a p-value  $> .5$ , which indicates that the number of years in business does not have any effect on the business re-

**Table 12**

Reason	Frequency*	Percent
Business has own computer system to do taxes	26	4.9
Prefers to use a tax preparer	226	42.6
Concerns about confidentiality	22	4.2
Fear of errors or lost info	88	16.6
Lack of trust in IRS	23	4.3
Other	145	27.5

\* 22 businesses did not answer the question.

**Table 13**

Number of years in business

Use?	1 - 5	6 - 10	11 - 15	16 - 20	21 - 30	31 - 49	50+	Total
Yes	57	73	48	34	48	49	64	372
No	77	102	79	61	79	63	72	509
Total	134	175	127	95	127	111	136	905*

\* There are 34 missing data points.

sponse to using TeleFile.

### *Number of Employees by TeleFile Response*

Table 14 shows the two-way distribution of TeleFile response by number of employees. The  $\chi^2$  statistic follows.

A  $\chi^2 = 5.3$  with five degrees of freedom has a p-value  $> .25$ , which indicates that the number of employees does not have any effect on the business response to using TeleFile.

### *Who Files Taxes by TeleFile Response*

Five different categories were given on the survey for who is primarily responsible for filing the taxes. They are 1) secretary or bookkeeper within the firm, 2) owner or manager, 3) professional accountant or tax preparer, 4) main office or corporate system, and 5) other. The two-way table (Table 15) shows the distribution by TeleFile response, and the  $\chi^2$  statistic follows.

A  $\chi^2 = 11.7$  with four degrees of freedom has a p-value  $< .025$ , which indicates that the response to us-

ing TeleFile does differ by who has primary responsibility for filing the tax returns. Based on the survey data, it appears that if the business uses a secretary or bookkeeper within the firm to file the taxes, then they are slightly more likely to say "Yes" to using TeleFile, while if the business uses a professional accountant or tax preparer, they are slightly more likely to say "No" to using TeleFile. A little over 40 percent of the responding businesses use a professional accountant or tax preparer to file their taxes. Of these, 35 percent said they would use TeleFile, while 65 percent responded "No" to using TeleFile. About 15 percent of the responding businesses use a secretary or bookkeeper, and a little over half responded "Yes" to using TeleFile.

### *Computer System to Compute Taxes*

Information Systems was interested in knowing how many businesses owned computer systems to compute taxes and if this would have an effect on their interest in using TeleFile. The survey indicates that about 37 percent of the businesses do own computer systems, while 63 percent do not. A comparison of the distribution of YES/NO to using TeleFile to YES/NO for owning a com-

**Table 14**

#### No. of Employees

Use?	1 - 2	3 - 4	5 - 6	7 - 10	11 - 20	21+	Total
Yes	67	76	57	51	53	83	387
No	106	133	85	64	64	100	552
<b>Total</b>	173	209	142	115	117	183	939

**Table 15**

#### Who has primary responsibility

Use?	Secretary / Bookkeeper	Owner / Manager	Prof. Acct / Tax Prep.	Main office / Corp.	Other	Total
Yes	72	125	137	7	46	387
No	68	165	244	6	69	552
<b>Total</b>	140	290	381	13	115	939

puter system is not significant. That is, owning a computer system to compute taxes did not have an effect on business willingness to use TeleFile. The two-way table (Table 16) and  $\chi^2$  statistic are given below.

A  $\chi^2 = 2.656$  with 1 degree of freedom has a p-value  $> .10$ , which indicates that there is no difference in the business attitude toward TeleFile based on ownership of a computer system.

*Postcard Experiment*

A small postcard experiment was conducted within the survey. About one-third of the businesses received an advance-notice postcard from the IRS, about one-third received a postcard from SRC, and the other one-third of the sample did not receive any postcard. The interest in the postcard experiment is twofold. First, does an advance-notice postcard have any effect on the response, and, second, does it matter who sends the post-

card?

The results from the survey seem to indicate that an advance-notice postcard did not have any effect on the response to using TeleFile. The two-way table, Table 17, and  $\chi^2$  statistic are provided.

A  $\chi^2 = 2.5$  with two degrees of freedom has a p-value  $> .25$ , which indicates that the type of postcard had no effect on the response to using TeleFile. It did not matter if the business received the advance-notice postcard or not. It did not have an effect on the response. Also, the type of postcard, either from the IRS or SRC, did not matter.

The survey respondents were also asked if they remembered receiving the postcard. A total of 614 respondents answered the question, and, of those, exactly half remembered receiving it. Again, the data support the conclusion above that the postcard had no effect on

**Table 16**

**Own Computer System**

Use TeleFile	Yes	No	Total
Yes	154	231	385
No	190	359	549
<b>Total</b>	344	590	934

**Table 17**

**Type of Postcard**

Use TeleFile	IRS	SRC	None	Total
Yes	128	120	139	387
No	188	183	170	552
<b>316</b>	316	303	320	939

Table 18

## Remember postcard

Use TeleFile	Yes	No	Total
Yes	130	118	248
No	177	189	366
Total	307	307	614

the response to TeleFile. The data are provided in Table 18 and  $\chi^2$  statistic is given below.

A  $\chi^2 = 1.16$  with 1 degree of freedom has a p-value  $> .25$  which indicates that there is no effect.

A further investigation of the postcard data did not indicate that there was any difference in remembering receiving the advance-notice postcard. That is, sole proprietors were not more likely to remember receiving the postcard than corporations.

### ■ Chi-Square Statistics

The Chi-square ( $\chi^2$ ) statistic referred to throughout this report is a statistical test that can be used to test for differences between attributes when the data are presented in table format. Sometimes this test for differences is also referred to as a test for independence. The degrees of freedom associated with the  $\chi^2$  statistic are related to the number of rows and columns in the table. The distribution of the  $\chi^2$  statistic changes with the degrees of freedom and determines the conclusion of differences between attributes. The p-value is the probability, based on the distribution of the  $\chi^2$  sta-

tistic, that one would observe a value larger than the actual one observed if the data were really independent. (Because the data are collected from samples, there is some uncertainty associated with sampling. This is reflected in the p-value.)

For example, look at the two-way table in the section of this paper entitled, Type of Business by TeleFile Response, which is shown again as Table 19.

The  $\chi^2$  test in this case is looking to see if there are any differences in the way that different types of businesses answer the question about using TeleFile. The initial assumption is that sole proprietors, partnerships, corporations, and "others" answer "Yes" to using TeleFile in the same proportion. We obtain a  $\chi^2 = 9.22$  with three degrees of freedom for this table. The three degrees of freedom are calculated by taking the number of rows minus one (2-1) times the number of columns minus one (4-1) to get (2-1)\*(4-1) = 3. Thus, when trying to decide if an observed value of 9.22 is large, the  $\chi^2$  distribution with three degrees of freedom should be used. The p-value for  $\chi^2 = 9.22$  with three degrees of freedom is  $< .05$ . That is, the probability of getting an  $\chi^2$  statistic greater than 9.22 for this situation,

Table 19

## Type of Business

Use TeleFile	Sole Prop.	Partnership	Corporation	Other	Total
Yes	96	26	207	56	385
No	180	38	280	54	552
Total	276	64	487	110	937*

\* 2 businesses did not respond to this question.

given the initial assumption, is less than .05. Therefore, there seems to be enough evidence to say that the initial assumption is not correct, that there is a difference in the way different types of businesses answer the TeleFile use question.

The exact formula for calculating the  $\chi^2$  statistic is given by  $\sum (f - F)^2 / F$ , where  $f$  is the observed value in a cell,  $F$  is the expected value under the initial assumption, and  $\sum$  is the sum over all cells in the table.  $F$ , the expected value, is calculated from the marginal totals of the table, by taking the row total times the column total divided by the grand total, for each cell in the table. For example, in the first cell, the observed value is  $f = 96$ , and the expected value is  $F = (276 * 385) / 937 = 113.4$ . Then, the first term in the calculation of the  $\chi^2$  statistics is  $(f - F)^2 / F = (96 - 113.4)^2 / 113.4 = 2.67$ . This is repeated for each cell in the table, and the resulting sum is 9.22.

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