Federal Tax Compliance Research

Individual Income Tax Gap Estimates
for 1985, 1988, and 1992

Department
of the
Treasury
**Internal
Revenue
Service**

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April 1996

Wayne Thomas
*National Director,
Compliance Research*

Elinor Convery
*Chief, Applied Research
Branch*

Dennis Cox
*Chief, Economic Analysis
and Modeling Group*

Chih-Chin Ho
Project Economist

This report contains the Internal Revenue Service's new estimates of the gross and net individual income tax gap. Earlier estimates were revised to reflect tax law changes and recent compliance data.

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EXECUTIVE SUMMARY

This report presents current Internal Revenue Service estimates of the individual income tax gap. Both gross and net tax gap estimates are presented. The gross tax gap is the amount of "true" tax liability for a particular tax year that is not paid voluntarily and timely. The net tax gap is the gross tax gap minus the amount of tax remitted late or collected by IRS through its enforcement activities. The estimates relate only to payment of tax on income earned in legal activities. For example, the income tax due but not paid on income from distribution of narcotics is not included.

Both gross and net tax gaps consist of three main components: nonfiling, underreporting, and underpayment. The nonfiling gap is the amount of tax liability owed by taxpayers who do not voluntarily and timely file returns. The underreporting gap is the amount of tax liability not voluntarily reported by taxpayers who do file returns. The underpayment gap is the amount of tax liability that individuals report on their tax returns, but do not pay voluntarily and timely.

Our estimates of the gross individual income tax gap for tax year (TY) 1992 range from $93.2 to $95.3 billion. Of this amount, the nonfiling gap accounts for an estimated $13.5 to $13.8 billion. The underreporting gap is estimated to account for another $71.3 to $73.1 billion, while our estimate of the underpayment gap is $8.4 billion. We estimate total "true" individual income tax liability to be $550.2 to $552.3 billion for TY 1992. Therefore, our estimates of the overall individual noncompliance rate (the gross tax gap as a percentage of the "true" tax liability) for TY 1992 range from 16.9 to 17.3 percent.

The net tax gap is the gross tax gap less amounts remitted late or collected as the result of enforcement. We estimate that IRS enforcement actions will eventually bring in $14.9 billion of TY 1992 revenue. Of this amount, an estimated $3.2 billion relates to the nonfiling gap, $6.9 billion to the underreporting gap, and $4.8 billion to the underpayment gap. Hence our estimates of the net tax gap for TY 1992 range from $78.3 to $80.4 billion. Of this amount, the net nonfiling gap accounts for an estimated $10.3 to $10.6 billion. The net underreporting gap is estimated to account for another $64.4 to $66.2 billion, while our estimate of the net underpayment gap is $3.6 billion.

Previously published IRS individual income tax gap estimates were based primarily on compliance data for TY 1982 and earlier years. The estimates presented in this report are derived from more recent compliance data, particularly Taxpayer Compliance Measurement Program (TCMP) examinations of individual income returns filed for TY 1985 and TY 1988, and the TCMP survey of nonfilers for TY 1988. The current estimates also reflect changes in tax law including changes from the Tax Reform Act of 1986 and the Omnibus Budget Reconciliation Act of 1990.

I. NONCOMPLIANCE CONCEPTS

A. Tax Gap Measures

Both the gross and net tax gaps are defined with respect to particular tax years. Gross and net tax gap estimates involve tax liabilities due and tax payments made for a given tax year, regardless of the tax year in which the payments are actually made.[1] "Timely" means within the time required by law.

1. Gross Tax Gap

The gross tax gap is defined as the amount of tax liability for a given tax year that is not paid voluntarily and timely. The words "voluntarily and timely" mean that payment is made prior to any IRS enforcement efforts *and* on or before the date on which payment was legally due.

2. Net Tax Gap

The net tax gap is defined as the gross tax gap minus the amount of tax collected for the tax year in question through enforcement.[2] It is the amount of "true" tax liability for a given tax year that is not eventually paid.

IRS enforcement activities include programs such as examination of tax returns, collection of overdue taxes, information document matching, correction of math errors, return delinquency investigations, and criminal investigation of fraudulent tax returns.

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[1] Typically, voluntary payments of year **n** tax liabilities are made in year **n** (through withholding and estimated tax payments) or in year **n+1** (estimated tax payments, payments with timely-filed returns for year **n,** and payments made with requests for extension of time to file). However, payments of year **n** liabilities made as a result of IRS enforcement efforts could take place many years after year **n**.

[2] Enforcement includes "self enforcement" by taxpayers. For example, taxpayers sometimes fail to pay their taxes timely but remit some or all of the delinquent amounts before IRS issues collection notices.

B. Tax Gap Components

Both the gross and net tax gaps can be divided into three main components: the nonfiling gap, the underreporting gap, and the underpayment gap.

1. Nonfiling Gap

The nonfiling gap is defined as the amount of tax liability owed by taxpayers who do not voluntarily and timely file required returns. It is net of amounts prepaid through withholding, estimated payments, and other credits. The nonfiler population does not include **legitimate nonfilers** (those who are not required to file).

2. Underreporting Gap

The underreporting gap is defined as the amount of tax liability not voluntarily reported by taxpayers who do file returns. It is net of amounts overreported (by, for example, failing to itemize deductions when those deductions would exceed the standard deduction). The underreporting gap consists of three components: underreported income, overstated offsets, and net math errors. **Underreported income** involves such taxable income items as wages and salaries, rents and royalties, and net business income. **Overstated offsets** include offsets to tax liability such as itemized deductions and tax credits. **Net math errors** involve arithmetic mistakes or transcription errors made by taxpayers.

3. Underpayment Gap

The underpayment gap is the amount of tax liability that taxpayers report, but do not pay voluntarily and timely. That is, the underpayment gap is the total of **insufficient remittances** from taxpayers who do not pay in full when they report their tax liabilities on their returns. (In our 1983 and 1990 tax gap reports, the underpayment gap was referred to as the "remittance gap." It included, in addition to the insufficient remittances of individuals, estimated amounts of income tax withheld by employers from employees' wages but not paid to the Government. Payment of these amounts is the responsibility of the employers, not of the employees; therefore, we do not include them in this report as part of the individual income tax gap.)

C. Related Noncompliance Measures

This report substitutes new noncompliance measures for the voluntary compliance measures used in previous IRS tax gap publications. Since the tax gap is a measure of **noncompliance**, these new measures are consistent with the tax gap concept in that they too are noncompliance measures.[3]

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[3] Another advantage of replacing voluntary *compliance* measures with *non*compliance measures is that differences in tax gap estimates and in corresponding noncompliance estimates are positively, rather than inversely, related.

The **noncompliance rate** (NCR) is defined as the ratio of the gross tax gap to the total "true" tax liability, expressed in percentage terms. The NCR is an overall measure of relative noncompliance. As one of the new measures in this report, NCR replaces the voluntary compliance rate (VCR), which was the amount of tax voluntarily paid, expressed as a percentage of the "true" tax liability. The NCR is, therefore, the noncompliance counterpart of the VCR, and it is equivalent to 100 percent minus the VCR.

The **net misreporting percentage** (NMP) is a measure of reporting noncompliance for a particular return line item. It is another of the new measures in this report, replacing the voluntary reporting percentage (VRP). The VRP was the amount reported for a given line item, expressed as a percentage of the amount that should have been reported. The NMP is, therefore, the noncompliance counterpart of the VRP; however, it is not always equivalent to 100 percent minus the VRP.

The NMP for a given tax return line item is defined as the ratio of the **net misreported amount** (NMA) in the taxpayer's favor to the sum of the absolute values of what should have been reported, expressed in percentage terms. For an income item, the NMA is defined as the sum of all amounts underreported minus the sum of all amounts overreported on the item. For an offset item (such as deductions or credits), the NMA is defined the sum of all amounts overstated minus the sum of all amounts understated on the item.

The NMP is not always equivalent to 100 percent minus the VRP because the denominators of the two measures are defined differently. To eliminate distortions where there is a combination of positive and negative amounts of income, the NMP denominator is the **sum of the absolute values** of the amounts that should have been reported. The VRP denominator, however, is the **sum of the algebraic values** of the amounts that should have been reported. Thus, the two denominators will be equal only for line items where the amounts that should have been reported are either all positive or all negative.

For all business income line items except estate and trust income, the NMP denominator differs from the VRP denominator in that the latter is net of losses. While the NMP and VRP for these line items have complementary numerators, the differences in the denominators mean that for this category of income the NMP **is not** equivalent to 100 minus the VRP. On the other hand, for all non-business income line items (except capital gains, Form 4797 income, and other income), the NMP **is** equivalent to 100 minus the VRP. For these line items, the NMP and VRP have complementary numerators and identical denominators.[4]

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[4] For more detailed discussion on the NMP measure, see Ho (1994).

II. THE ESTIMATES

The gross and net tax gap estimates in this report are presented in the form of a range of "higher" and "lower" estimates. These ranges of estimates illustrate the degree of uncertainty inherent in estimating the "true" tax liability. "True" tax liability is the sum of the gross tax gap and the amount of tax voluntarily and timely paid; therefore, our "higher" and "lower" tax gap estimates correspond to "higher" and "lower" estimates of "true" tax liability.

The tax gap estimates are based in part on IRS audits of tax returns. The difference between the higher and lower estimates arises from alternative uses of the results of the audits. Our "higher" estimates of tax liability are based on tax adjustments initially **recommended** by examiners, while our "lower" estimates reflect tax deficiencies ultimately **assessed** after all appeals and litigation have been completed. The difference between these estimates represents recommended adjustments that are conceded in the appeals process or lost in litigation.[5] The "true" tax liability value is probably somewhere **within** this range of estimates.[6]

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[5] Examination recommendations are conceded or lost for a variety of reasons including the following: the facts or legal interpretation relied on by the examiner are judged to be incorrect; the facts or legal interpretation relied on by the Appeals Officer or court are incorrect; the recommendation is judged by the Appeals Officer to be subject to "hazards of litigation;" in examinations of the returns of two or more taxpayers who engaged in a transaction which gave rise to a tax deficiency proposed against all of them, the Appeals Officer or a court determines which taxpayer owes the tax and concedes the issue against the others.

[6] The "true" tax liability could be greater than our "higher" estimate if our estimation methodology does not fully account for undetectable tax deficiencies. Conversely, the "true" tax liability could be less than our "lower" estimate if taxpayer appeals and litigation do not, on balance, fully offset any unjustified tax examiner recommendations in IRS's favor.

A. Gross Tax Gap

Table 1 presents our estimates of the gross individual income tax gap by main gap components for tax years 1985, 1988, and 1992. The estimated gross gap ranges from $68.9 to $70.4 billion for TY 1985, from $79.3 to $80.9 billion for TY 1988, and from $93.2 to $95.3 billion for TY 1992.

Table 1 Range of Gross Tax Gap Estimates Individual Income Tax Tax Years 1985, 1988, and 1992 ($ billions)						
Tax Gap Component	**TY 1985**		**TY 1988**		**TY 1992**	
	Low	**High**	**Low**	**High**	**Low**	**High**
Nonfiling Gap						
Total	**9.6**	**9.8**	**11.0**	**11.2**	**13.5**	**13.8**
Underreporting Gap						
Underreported Income	43.6	44.6	46.0	47.1	57.2	58.6
Overstated Offsets	8.8	9.1	10.9	11.3	14.0	14.4
Net Math Error	-0.2	-0.2	0.2	0.2	0.1	0.1
Total	**52.2**	**53.5**	**57.1**	**58.5**	**71.3**	**73.1**
Underpayment Gap						
Total	**7.1**	**7.1**	**11.2**	**11.2**	**8.4**	**8.4**
Gross Tax Gap	**68.9**	**70.4**	**79.3**	**80.9**	**93.2**	**95.3**
Voluntarily and Timely Paid	**303.3**	**303.3**	**381.4**	**381.4**	**457.0**	**457.0**
"True" Tax Liability	**372.2**	**373.7**	**460.7**	**462.3**	**550.2**	**552.3**

Table 2 puts the relative importance of the components of the tax gap in perspective by presenting them as percentages of the estimated "true" tax liability for tax years 1985, 1988, and 1992.   The ranges of our estimates of the overall gross noncompliance rate (the gross tax gap as

a percentage of the "true" tax liability) are 18.5 to 18.8 percent for TY 1985, 17.2 to 17.5 percent for TY 1988, and 16.9 to 17.3 percent for TY 1992. The estimated improvement in overall compliance from 1985 to 1988 is due primarily to estimated improvements in the underreporting gap portion of the total. The 1992 figures are projections based on 1988 compliance rates. The small improvement from 1988 to 1992 is due to a change in the composition of income reported between types with relatively low compliance rates and types with relatively high compliance rates.

TABLE 2 Range of Noncompliance Estimates as Percentages of "True" Tax Liability Individual Income Tax Tax Years 1985, 1988, and 1992 (percent)						
Tax Gap Component	**TY 1985**		**TY 1988**		**TY 1992**	
	Low	**High**	**Low**	**High**	**Low**	**High**
Nonfiling Gap						
Total	**2.6**	**2.6**	**2.4**	**2.4**	**2.5**	**2.5**
Underreporting Gap						
Underreported Income	11.7	11.9	10.0	10.2	10.4	10.6
Overstated Offsets and Credits	2.6	2.4	2.4	2.4	2.6	2.6
Net Math Errors	-0.1	-0.1	<0.05	<0.05	<0.05	<0.05
Total	**14.0**	**14.3**	**12.4**	**12.7**	**13.0**	**13.2**
Underpayment Gap						
Total	**1.9**	**1.9**	**2.4**	**2.4**	**1.5**	**1.5**
Gross Tax Gap	**18.5**	**18.8**	**17.2**	**17.5**	**16.9**	**17.3**
Voluntarily and Timely Paid	**81.5**	**81.2**	**82.8**	**82.5**	**83.1**	**82.7**
"True" Tax Liability	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: detail may not add to total due to rounding.

1. Nonfiling Gap

For TY 1992, estimates of the nonfiling gap range from $13.5 to $13.8 billion; these estimates are about 2.5 percent of the estimated true tax liability.

2. Underreporting Gap

The underreporting gap is by far the largest of the three gross tax gap components. For TY 1992, it accounts for an estimated $71.3 to $73.1 billion of the $93.2 to $95.3 billion estimated gross gap; these estimates are 13.0 percent and 13.2 percent of true tax liability, respectively. Underreported income accounts for about four-fifths of the underreporting gap, amounting to an estimated $57.2 to $58.6 billion for TY 1992. Overstated income offsets and tax credits are about one-fifth of the gap, with TY 1992 estimated values ranging from $14.0 to $14.4 billion. Finally, estimated net math errors account for only $0.1 billion of the TY 1992 underreporting gap.[7] For additional detail on the underreporting gap, see the next section entitled "Misreporting."

3. Underpayment Gap

We estimate that the underpayment gap for TY 1992 was $8.4—1.5 percent[8] of true tax liability, and less than 10 percent of the total gross tax gap.

B. Underreporting

As described in the preceding section, the underreporting gap accounts for approximately 75 percent of the estimated TY 1992 gross tax gap. The purpose of this section is to look more closely of the components of the underreporting gap. For the underreporting portion of the gross tax gap, Table 3 shows the TY 1992 estimates of the net misreported amounts (NMA) and the net misreporting percentage (NMP) for specific income and offset items. (Similar tables for 1985 and 1988 are in Appendix B.)

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[7] Net math errors are not subject to change in the appeals process or in litigation. As a result, the estimate is expressed as a single number, rather than a range.

[8] Because the underpayment gap involves only taxes that have been reported but not paid and does not involve the amount of "true" tax liability, our underpayment gap estimates are expressed as single numbers rather than as range estimates.

TABLE 3
Range of Estimates of the Underreporting Gross Tax Gap by Specific Items
(Net Misreported Amounts and Net Misreporting Percentages)
Tax Year 1992

Tax Gap Component	Underreporting Tax Gap ($ billions)		Net Misreported Amount ($billions)		Net Misreporting Percentage (percent)	
	Low	High	Low	High	Low	High
TOTAL UNDERREPORTING GAP	**71.3**	**73.1**	**323.7**	**331.9**	**n.a.**	**n.a.**
UNDERREPORTED INCOME	**57.2**	**58.6**	**277.0**	**283.7**	**n.a.**	**n.a.**
Non-Business Income	**18.1**	**18.7**	**92.3**	**95.2**	**2.5**	**2.6**
Wage Income	3.1	3.2	23.3	24.0	0.9	0.9
Interest Income	0.9	0.9	3.5	3.6	2.2	2.3
Dividends	1.3	1.3	5.9	6.1	7.6	7.8
State Tax Refunds	<0.05	<0.05	0.1	0.1	0.8	0.8
Alimony Income	0.1	0.1	0.3	0.3	13.0	13.3
Pensions & Annuities	1.7	1.8	8.3	8.6	3.9	4.0
Unemployment Compensation	0.3	0.3	2.2	2.3	6.7	6.9
Social Security Benefits	0.2	0.2	1.0	1.0	4.1	4.2
Capital Gains	2.4	2.5	9.1	9.4	6.9	7.2
Form 4797 Income	0.7	0.7	3.8	3.9	27.1	28.0
Other Income	7.4	7.6	34.8	35.9	24.1	24.9
Business Income	**39.1**	**39.9**	**184.7**	**188.5**	**29.4**	**30.0**
Nonfarm Proprietor Income	16.4	16.9	72.2	74.4	31.3	32.3
Informal Supplier Income	12.3	12.3	59.6	59.6	81.4	81.4
Farm Income	3.3	3.4	17.4	17.9	31.3	32.2
Rents & Royalties	3.6	3.7	18.8	19.4	16.6	17.2
Partnership & SBC Income	3.5	3.6	16.7	17.2	7.2	7.5
OFFSETS TO INCOME	**8.0**	**8.2**	**40.7**	**42.0**	**4.3**	**4.4**
Adjustments	0.2	0.2	0.7	0.7	1.9	2.0
Deductions	5.0	5.1	19.3	19.9	4.3	4.4
Exemptions	2.8	2.9	20.7	21.4	4.4	4.5
TAX CREDITS	**6.0**	**6.2**	**6.0**	**6.2**	**38.9**	**40.2**
NET MATH ERRORS	**0.1**	**0.1**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

1. Underreported Income

Estimated overall underreported income for TY 1992 ranges from $277.0 to $283.7 billion, generating an estimated gross tax gap of $57.2 to $58.6 billion. Underreported net business income ranges from $184.7 to $188.5 billion for TY 1992, or two-thirds of the total, while estimates of underreported non-business income range from $92.3 to $95.2 billion.

Among various types of business income, misreporting of nonfarm sole proprietor income comprises 40 percent of the total, with estimates ranging from $72.2 to $74.4 billion. Informal suppliers are estimated to account for another $59.6 billion of underreported net business income, or about one-third of the total. Underreported informal supplier income accounts for just over one-fourth of the total tax gap attributable to business income, but the NMP for informal supplier income is by far the highest of any business income category. Farm income accounts for a much smaller portion of the tax gap than does nonfarm proprietor income, but its noncompliance rate, as measured by NMP, is virtually identical.

Misreported "other income," with estimates ranging from $34.8 to $35.9 billion, accounts for more underreported income than any other type of non-business income. It is about one-third of the total, and its noncompliance rate (NMP) is among the highest for non-business income categories. The three types of non-business income with the next largest estimated misreported income amounts are wages and salaries ($23.3 to $24.0 billion), capital gains ($9.1 to $9.4 billion), and pensions and annuities ($8.3 to $8.6 billion). The three largest NMPs are for other income, Form 4797 income, and alimony income.

The types of income with the best reporting compliance (lowest NMPs) are state and local income tax refunds at 0.8 percent and wages and salaries at 0.9 percent.

2. Overstated Offsets and Credits

As shown in Table 3, our estimates of overstated income offsets account for $8.0 to $8.2 billion of gross tax gap. Tax credits account for $6.0 to $6.2 billion, but the estimated net misreporting percentage for tax credits (38.9 to 40.2 percent) is considerably higher than the estimated NMPs for offsets to income (ranging from about two percent for adjustments to about 4.5 percent for deductions and exemptions).

C. IRS Enforcement Revenue

The enforcement revenue estimates in this report relate to the particular tax years for which we have estimated the gross income tax gap. This is not completely straightforward because enforcement activities for those tax years have not yet been completed. For example, for TY 1992, audits of some 1 million returns began as early as October of 1993 and as late as September of 1994; the more complex of those audits may take more than one year to complete; some of the results will be appealed by the taxpayers, and the appeals and litigation processes can take several years in some cases. Therefore, we project the enforcement results to estimate the total amount of tax deficiencies which eventually will be collected for each tax year. These estimates do not include the penalties and interest which will also eventually be collected. Our estimating methods implicitly include amounts of tax remitted by the taxpayers after the due date for payment but without direct IRS enforcement action.

1. Nonfiling Gap

There are two main sources of enforcement revenue related to the nonfiling gap: information document matching (information returns program, or "IRP") and investigations of taxpayers who stop filing returns. The former detects nonfilers with substantial amounts of income by matching third-party reports ("IRP documents" such as Forms 1099 and Forms W-2) of income paid against IRS masterfile records of tax returns filed. We estimate that these efforts will generate $1.4 billion of enforcement revenue for TY 1992. We estimate that using IRS masterfile records to detect taxpayers who stop filing returns will generate $1.8 billion of enforcement revenues for TY 1992. We estimate that total nonfiler-related enforcement revenues will be $2.1 billion for TY 1985, $3.7 billion for TY 1988, and $3.2 billion for TY 1992.

2. Underreporting Gap

The largest source of enforcement revenue with respect to the underreporting gap is the examination of returns filed by taxpayers. We estimate that for TY 1992 such examinations will generate $5.2 billion. The other important source of underreporting gap enforcement revenue is the matching of income data on IRP documents against income data reported by taxpayers on their returns. Our estimate of IRP document matching enforcement revenue for TY 1992 is $1.7 billion. Overall, our estimates of underreporting gap enforcement revenue are $5.9 billion for TY 1985, $6.6 billion for TY 1988, and $6.9 billion for TY 1992.

3. Underpayment Gap

We estimate that individual underpayment enforcement revenues for TY 1992 will be $4.8 billion. Most of this amount will result from taxpayer responses to IRS notices concerning their underpayments. Some will pay in full, others partially or in installments. Some taxpayers

who do not pay in response to notices will pay in response to IRS telephone contacts, liens, levies and other enforcement measures. We estimate this revenue to be $4.1 billion for TY 1985 and $6.4 billion for TY 1988.

Table 4 presents estimates of the total, and the components of, revenue attributable to IRS enforcement actions for tax years 1985, 1988, and 1992. The sources of enforcement revenue are also shown for the major components of the tax gap.

TABLE 4 **Enforcement Revenue Estimates** **Individual Income Tax** **Tax Years 1985, 1988, and 1992** **($ billions)**			
Component	**1985**	**1988**	**1992**
Nonfiling			
Document Matching	1.1	1.9	1.4
Stopfiler	1.0	1.8	1.8
Total	**2.1**	**3.7**	**3.2**
Underreporting			
Examination of Returns	4.0	4.7	5.2
Document Matching	1.9	1.9	1.7
Total	**5.9**	**6.6**	**6.9**
Underpayment			
Total	**4.1**	**6.4**	**4.8**
Enforcement Revenue	**12.1**	**16.7**	**14.9**

D. Net Tax Gap

The net tax gaps are equal to the gross tax gaps minus the enforcement revenues. Our estimates of the overall net individual income tax gap, shown in Table 5, range from $56.8 to $58.3 billion for TY 1985, from $62.6 to $64.2 billion for TY 1988, and from $78.3 to $80.4 billion for TY 1992. These net tax gap estimates correspond to enforcement revenue estimates of $12.1 billion for TY 1985, $16.7 billion for TY 1988, and $14.9 billion for TY 1992, as shown in Table 4.

TABLE 5 Estimates of Gross Tax Gap, Enforcement Revenue, and Net Tax Gap Individual Income Tax Tax Years 1985, 1988, and 1992 ($ billions)						
Tax Gap Component	TY 1985		TY 1988		TY 1992	
	Low	High	Low	High	Low	High
NONFILING						
Gross Tax Gap	9.6	9.8	11.0	11.2	13.5	13.8
Enforcement Revenue	2.1	2.1	3.7	3.7	3.2	3.2
Net Tax Gap	7.5	7.9	7.3	7.5	10.3	10.6
UNDERREPORTING						
Gross Tax Gap	52.2	53.5	57.1	58.5	71.3	73.1
Enforcement Revenue	5.9	5.9	6.6	6.6	6.9	6.9
Net Tax Gap	46.3	47.6	50.5	51.9	64.4	66.2
UNDERPAYMENT						
Gross Tax Gap	7.1	7.1	11.2	11.2	8.4	8.4
Enforcement Revenue	4.1	4.1	6.4	6.4	4.8	4.8
Net Tax Gap	3.0	3.0	4.8	4.8	3.6	3.6
TOTAL						
Gross Tax Gap	**68.9**	**70.4**	**79.3**	**80.9**	**93.2**	**95.3**
Enforcement Revenue	**12.1**	**12.1**	**16.7**	**16.7**	**14.9**	**14.9**
Net Tax Gap	**56.8**	**58.3**	**62.6**	**64.2**	**78.3**	**80.4**

E. Tax Gap Trends

Table 6 presents, for 1985, 1988, and 1992, our higher estimates of the total individual income tax gap, the three major components, and the ten largest elements of the underreporting gap. The ten underreporting elements are ranked by the sizes of our estimates for TY 1992. (The lower estimates are derived as simple percentages of the higher estimates; since these percentages are the same for each year, the lower estimates reveal nothing additional about trends. See Tables B6, B7, and B8 in Appendix B for the lower estimates.) The estimates for the first two of these years are based on TCMP data for those years. The 1992 estimates are based on the assumption that, line-by-line, 1992 compliance rates were the same as for 1988.

Tax Gap Component	Gross Tax Gap ($ billions)			Noncompliance as Percentage of "True" Tax Liability		
	1985	**1988**	**1992**	**1985**	**1988**	**1992**
NONFILING	**9.8**	**11.2**	**13.8**	**2.6**	**2.4**	**2.5**
UNDERPAYMENT	**7.1**	**11.2**	**8.4**	**1.9**	**2.4**	**1.5**
UNDERREPORTING*	**53.5**	**58.5**	**73.1**	**14.3**	**12.7**	**13.2**
Nonfarm Proprietor Income	13.4	14.4	16.9	3.6	3.1	3.1
Informal Supplier Income	10.6	10.8	12.3	2.8	2.3	2.2
Other Income	5.9	5.0	7.6	1.6	1.1	1.4
Tax Credits	2.3	4.1	6.2	0.6	0.9	1.1
Deductions	4.4	4.3	5.1	1.2	0.9	0.9
Rents & Royalties	2.0	2.0	3.7	0.5	0.4	0.7
Partnership & SBC Income	0.8	2.4	3.6	0.2	0.5	0.7
Farm Income	1.9	1.7	3.4	0.5	0.4	0.6
Exemptions	1.6	2.7	2.9	0.4	0.6	0.5
Capital Gains	3.6	3.3	2.5	1.0	0.7	0.5
All Other Items	7.0	7.8	8.9	1.9	1.4	1.6
TOTAL	**70.4**	**80.9**	**95.3**	**18.8**	**17.5**	**17.3**

TABLE 6
Higher Gross Tax Gap Estimates And Percentages of "True" Tax Liability
Individual Income Tax
Tax Years 1985, 1988, and 1992

* Ranked by the size of the 1992 estimate.

The total gross tax gap grew, according to these estimates, by about $10 billion between 1985 and 1988, and by about $14 billion from 1988 to 1992. However, as a percentage of true liability overall compliance improved by more than one percentage point from 1985 to 1988. That is, the tax gap grew more slowly than tax liability so that the overall compliance rate rose. This reflects the TCMP results, which showed an improvement in compliance between these years. The estimates of the noncompliance rates for 1988 and 1992 are almost identical. This reflects the assumption of line-by-line constancy of compliance over these years. The change in the gross tax gap's percentage of true liability of one-tenth of one point is the net result of a change in the mix of types of income/deductions/credits and a reduction in the underpayment gap.

The nonfiling gap grew over the three years, but its percentage of true liability is almost constant. This pattern may be due to the fact that the estimates for all three years are based on the 1988 nonfiler TCMP data.

Table 6 shows the underpayment gap rising and then falling over this period. The available data indicate that nonremittance, as a percentage of the aggregate balances due on tax returns, peaked in 1987 and then declined in 1988 and again in 1989. The estimates for 1992 are based on the average percentage estimated for the period 1982-1989.

The improvements in overall compliance indicated by the 1988 TCMP are reflected in the decline in the estimated underreporting percentage from 14.3 percent to 12.7 percent from 1985 to 1988. Our projections indicate that constant compliance in each underreporting category from 1988 to 1992 would cause the underreporting's percentage of true liability to rise to 13.2 because of the changing composition of income and the changing frequency of various deductions and credits.

Of the components of the underreporting gap, the top two in 1992 are nonfarm proprietor income and informal supplier income. Together they comprise 5.3 percent of total liability in 1992, down from 6.4 percent in 1985. The fourth-place item—tax credits—ranked eighth for 1985. Tax credits overreporting, as a percentage of total tax liability, roughly doubled between 1985 and 1992. (The growth in overreported credits' percentage of true liability from 1988 to 1992 is due to the rapid growth of reported credits, especially EITC, during this period.) Underreported capital gains declined in relative importance between 1985 and 1992, from 1.0 percent of total true liability in 1985 to 0.5 percent in 1992.

The net misreporting percentages for the components of the underreporting gap are shown in Table 7 for Tax Years 1985 and 1988--the years of the last two TCMP surveys for individual income tax. For each income and offset item, the contribution to the gross underreporting gap is also shown.

Table 7 **Net Misreporting Percentage (NMP) and Higher Gross Tax Gap Estimates by Underreporting Gap Component Tax Years 1985 and 1988**				
Underreporting Gap Component	**TY 1985**		**TY 1988**	
	NMP (percent)	**Gap ($ billions)**	**NMP (percent)**	**Gap ($ billions)**
Non-Business Income				
Wage Income	0.6	2.2	0.9	2.7
Interest Income	2.5	1.1	2.3	1.1
Dividends	9.9	1.6	7.8	1.3
State Income Tax Refunds	4.6	0.1	0.8	<0.05
Alimony Income	6.1	0.1	13.3	0.1
Pensions & Annuities	2.3	0.5	4.0	1.4
Unemployment Compensation	16.9	0.2	6.9	0.1
Social Security Benefits	5.0	0.1	4.2	0.1
Capital Gains	13.8	3.6	7.2	3.2
Form 4797 Income	22.5	0.5	28.0	0.6
Other Income	37.2	5.9	24.9	5.1
Business Income				
Nonfarm Proprietor Income	35.0	13.4	32.3	14.4
Informal Supplier Income	72.8	10.6	81.4	10.8
Farm Income	31.3	1.9	32.2	1.7
Rents & Royalties	17.0	2.0	17.2	2.0
Partnership & SBC Income	2.6	0.8	7.5	2.4
Offsets to Income				
Adjustments	4.0	0.7	2.0	0.2
Deductions	4.2	4.4	4.4	4.3
Exemptions	4.8	1.6	4.5	2.7
Tax Credits	26.2	2.3	40.2	4.1

Among the categories of *non-business income* noncompliance rates (NMPs) increased appreciably for alimony income, pension income, and gains on sales of business property (Form 4797 income). However, none of these were among the top ten items shown in Table 6. The NMP for wages increased by three tenths of one percentage point. The lower tax rates of 1988 counteracted the decline in compliance, so that the tax gap associated with wages rose only moderately.

There were marked improvements in compliance for state income tax refunds and taxable unemployment compensation--two very small contributors to the total tax gap. Substantial improvements also occurred for capital gains and other income--two more significant sources of tax gap. The large improvement in compliance for capital gains resulted in a very small reduction in the contribution to the tax gap. This is due to the elimination of the 60-percent exclusion of capital gains income by the 1986 Act.

Among the categories of *business income*, we estimate that informal supplier reporting compliance deteriorated substantially. However, note that, unlike the other NMPs in Table 7, the 1988 NMP for this category is based not on new basic data but on extrapolation of survey data from the mid-1980s. Reporting compliance for the other categories of business income did not change appreciably.

For offsets to income, compliance in reporting adjustments improved significantly. Compliance in reporting credits declined markedly, due mainly to the elimination of the investment tax credit (which was underreported in 1985) by the 1986 Act, and to increased overreporting of EITC in 1988.

III. COMPARISON WITH PRIOR IRS ESTIMATES

IRS's last estimates of the gross income tax gap were published in 1988 and 1990[9]. They were based on the 1982 and earlier TCMP surveys and other compliance data. The 1988/90 reports presented detailed estimates for TY 1987. While this report focuses on 1985, 1988, and 1992, the tax model used for those years also generates estimates for other years by interpolation. We can, therefore, compare the 1988/90 reports' estimates for 1987 with estimates for that year, which are consistent with more current data. (We are unable to compare compliance rates for our previous and current estimates for 1987 because we did not use the concept of net misreporting percentage in the 1988/90 report. In that report, we showed net misreporting percentages, but only for line items that do not include loss amounts.)

Table 8 presents the higher gross tax gap estimates from the 1988/90 reports, and percentages of true liability calculated from those estimates, together with comparable current estimates. Estimates are shown for the three major components of the tax gap and for ten elements of the underreporting gap. The 1988/90 underpayment gap estimate shown in Table 8 is the estimate for insufficient remittance by individuals from the 1990 report. That report also included estimates of employer underdeposit of withheld income tax. Since the latter is not part of the individual income tax gap, we exclude it from this comparison.[10] (We do not include lower estimates in Table 8 because the method and the data used to derive our current lower estimates from the higher estimates are exactly the same as those used for the 1988/90 estimates; differences between the current and prior lower estimates are, therefore, due altogether to differences in the higher estimates shown in Table 8. Our 1988/90 report did not contain lower estimates for the components of the underreporting gap.)

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[9] See Internal Revenue Service (1988a, 1990a)

[10] The estimate of employer underdeposits of withheld income tax in the 1990 report was $2.9 billion for TY 1987. Our current estimate for that year is $5.7 billion. Our current estimates of employer underdeposits of withheld income tax for 1985, 1988, and 1992 are $4.0, $4.9, and $6.4 billion respectively.

TABLE 8				
Current and 1988/90 IRS Higher Estimates of the				
Gross Individual Income Tax Gap and Percentages of "True" Tax Liability				
Tax Year 1987				
Tax Gap Component	**Gross Tax Gap ($ billions)**		**Percentage of "True" Tax Liability**	
	1988/90 Estimate	**Current Estimate**	**1988/90 Estimate**	**Current Estimate**
NONFILING	**7.2**	**10.2**	**1.9**	**2.4**
UNDERPAYMENT	**5.0**	**10.1**	**1.3**	**2.4**
UNDERREPORTING*	**56.3**	**52.1**	**14.6**	**12.5**
Nonfarm Proprietor Income	16.6	13.2	4.4	3.2
Informal Supplier Income	7.7	10.2	2.0	2.4
Capital Gains & Form 4797 Income	6.7	3.8	1.7	0.9
Other Income	3.6	4.6	0.9	1.1
Deductions	3.5	4.2	0.9	1.0
Interest & Dividends	3.2	2.2	0.8	0.5
Partnership & SBC Income	3.2	1.9	0.8	0.5
Rents & Royalties	3.1	2	0.8	0.5
Exemptions	2.0	2.6	0.5	0.6
Tax Credits	0.9	1.9	0.2	0.5
All Other Items	5.8	5.5	1.6	1.3
TOTAL TAX GAP	**68.5**	**72.4**	**17.8**	**17.3**
"True" Liability	384.9	417.5	100.0	100.0

* Ranked by the size of 1988 estimates

Based on our current data and estimating techniques, we are revising our estimate of the gross individual income tax gap for TY 1987 upward by $3.9 billion, from $68.5 billion to $72.4 billion. However, we are revising our estimate of the total percentage of noncompliance in true liability (also known as the noncompliance rate) downward from 17.8 to 17.3. This apparent anomaly arises because the underlying estimates of tax voluntarily paid and of the true liability for 1987 have also been revised. When we prepared the March 1988 publication, data on actual individual income tax payments were not available. The compliance rates shown there were based on elaborate projections of 1987 personal income by type of income and on estimates of the impact that the Tax Reform Act of 1986 would have on true and reported liabilities.

The increase of $3.9 billion in the total gross gap is the net result of increases in the nonfiling and underpayment components (by $3.0 and $5.1 billion respectively) and a decrease in the underreporting component (by $4.2 billion). The current estimates of the percentages of these gaps in true tax liability have changed correspondingly; the percentages for nonfiling and underpayment are higher in the current estimates, while the percentage for underreporting is lower.

The increase in the nonfiling tax gap estimate for TY 1987 is due to major changes in the methods used to estimate this component. In our 1988 report, we relied on the Bureau of the Census's 1972 and 1977 studies in which the Bureau's Current Population Survey data were matched with the identities of the individuals who had filed tax returns for those years. In this report, we rely on a TCMP study of individuals who were known or thought to exist but who did not file tax returns for TY 1988. The analysis of these data is described in Appendix A. The results were extrapolated back to 1987 to obtain the current nonfiling estimate.

When the previous estimates were made, the latest available figures on individuals' failure to pay taxes reported on their returns were for TY 1983. Our previous estimate of the insufficient remittance portion of the underpayment gap (then called the "remittance gap") was based on that information. Our current estimate is based on an actual tabulation of insufficient remittances for TY 1987. The actual amount for 1987 was more than twice as large as our previous estimate.

Table 8 displays the current and 1988 estimates of the ten largest components of the underreporting gap (ranked in descending order of the previous estimates). The percentage of true liability for the largest component—underreported nonfarm proprietor income—is smaller by 1.2 points than it was in the previous estimates. But, it is still comfortably larger than the second-place component—underreported informal supplier income—even though our estimate of the percentage of true liability for the latter is larger by four-tenths of a point in our current estimates. These underreported amounts together account for 5.6 percent of the total true individual income tax liability for TY 1987.

The third-place component in our previous estimates for TY 1987—underreported capital gains income—ranks only sixth in our current estimates. This reflects a substantial increase in reporting compliance for this type of income between the 1982 TCMP results, the basis of our 1988 estimates, and those of the 1985 and 1988 TCMP surveys, the basis of our current estimates. The tenth-place item in the previous estimates was tax credits. This item ranks sixth in the current estimates for TY 1987. This change reflects a change in reporting compliance revealed by the 1985 and 1988 TCMP surveys, as compared to the 1982 survey. The decline in compliance is largely accounted for by the growth of improper or excessive claims of earned income tax credit (EITC).

IV. SOURCES AND METHODS

The tax gap estimates in this report were developed from data from a variety of sources and different estimation techniques for the various gap components. In estimating both the gross and net tax gaps, separate estimates were developed for each component: the underreporting gap, the nonfiling gap, and the underpayment gap.

A. Gross Tax Gap

1. Underreporting Gap

Our "higher" estimates of the underreporting gap are generated using an IRS tax gap model to develop estimates for most types of income and offsets to income. Estimates of underreporting for some income types, however, are based on data from special consumer surveys. Our "lower" underreporting gap estimates are developed from the "higher" estimates. The methods are explained in Appendix B to this report and in detail in Appendices A, C, and E to our 1988 report.[11]

IRS Tax Gap Model

The IRS tax gap model is largely based upon data from Taxpayer Compliance Measurement Program (TCMP) examinations of tax returns.[12] These data show what taxpayers reported on their returns and what TCMP examiners determined they should have reported. The model uses these data to estimate the extent to which filers underreport income and overstate offsets.

TCMP data, however, understate reporting noncompliance to the extent that TCMP examinations do not detect **all** underreported income. The model therefore augments the TCMP data with estimates of underreported income **not** detected by TCMP. (Estimates of misreporting of offsets is not adjusted because, in the audits, taxpayers can be required to support reported offsets.) These estimates of additional undetected income are based on an IRS study of a sub-sample of the TY 1976 TCMP survey of individual filers. That study found that, on average, for every dollar of underreported income detected by TCMP examiners without the aid of IRP

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[11] Internal Revenue Service (1988b)

[12] TCMP is a special examination program designed to make possible sample-based population estimates of voluntary compliance. Under this program, tax returns are randomly selected for thorough, intensive examinations. Until recently, TCMP surveys of individual returns have generally been conducted every three years, with results of the 1988 survey being the most recent available.

information documents,[13] another $2.28 went undetected. As a result, the model uses a "multiplier" of 3.28 to expand amounts of unreported income detected in TCMP without the aid of information documents.

For years between TCMP years, the model interpolates, for each income and offset item, between the compliance rates (after multiplier expansion where appropriate) for the TCMP years; the resulting compliance rate is then applied to adjusted SOI estimates of the amount reported for the item to generate estimates of misreporting. Appropriate marginal tax rates are then applied to produce tax gap estimates. For years after the last TCMP year, the model assumes for each item that the compliance rate is the same as that for the last TCMP year, and applies that rate to actual or projected amounts reported. Thus, the 1987 estimates in our previous report were based on 1982 reporting rates, while the estimates of this report are based on a blend of 1985 and 1988 reporting rates.

IRS-sponsored Survey Data

Data from special IRS-sponsored surveys were used to develop underreporting estimates for tip income and informal supplier income. The special survey data were extrapolated to tax years for which TCMP surveys were conducted and then imputed to individual records by the IRS tax gap model in order to generate underreporting gap estimates for tip and informal supplier income.

The underreported tip income estimates are based upon consumer surveys conducted for IRS by the Survey Research Laboratory of the University of Illinois.[14] These surveys asked restaurant patrons about their restaurant tipping behavior during 1982 and 1984.

Our underreported informal supplier income estimates are based upon results of IRS-sponsored research on informal supplier incomes conducted by the Survey Research Center of the University of Michigan.[15] This research surveyed consumers and asked them to estimate the amounts of money they paid to informal suppliers during 1981 and 1985-1986.

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[13] IRS's Information Returns Program (IRP) matches information reported on tax returns against taxpayer income and expense information sent to IRS by third parties such as employers (Form W-2), banks (Form 1099-INT), and mortgage holders (Form 1098).

[14] See Pearl (1988a,b).

[15] See Adams and Smith (1987).

Range of Estimates

The estimation methodology described above, utilizing TCMP and special survey data, was used to develop our "higher" estimates of the underreporting gap, which are based on tax adjustments initially recommended by IRS examiners. Our "lower" estimates, however, reflect tax changes ultimately assessed after all appeals and litigation have been completed. The differences between these estimates represent recommended adjustments that are conceded in the appeals process or lost in litigation.

Our "lower" estimates are 97 percent of the higher estimates. The factor was derived from analysis of appeal rates and sustention rates for adjustments to tax liability in examination cases in various classifications. The same factor is used for every year. We have no information to support separate factors for the various types of misreporting; therefore, we apply the figure based on tax adjustment information.

2. Nonfiling Gap

Our estimate of the nonfiling gap is derived from the results of two segments of the TCMP nonfiler survey for TY 1988 (TCMP Phase IX, Cycle 2): a Collection-based segment to locate the potential nonfilers and to secure the delinquent returns that should have been filed, and a subsequent Examination-based segment to determine the reporting accuracy of those secured delinquent returns.

The Collection-based segment consisted of a stratified random sample of 23,286 nonfiler leads from the 88 million "potential nonfilers" - individuals who did not timely file an income tax return for tax year 1988. These leads were used by IRS agents to locate the individuals. Once the individuals were successfully located, IRS officers used information documents and past filing records to determine whether a return should have been filed and, if possible, to secure tax returns in cases from taxpayers determined to be delinquent.

The Examination-based segment consists of a random subsample of 2,198 returns drawn from 3,546 secured delinquent returns contained in the Collection-based segment. They represent the delinquent nonfilers from whom secured delinquent returns would be forthcoming in the event of routine IRS contacts. These 2,198 secured delinquent returns were subjected to the same intensive line-by-line audit as the 54,000 timely filed returns contained in the TCMP filer survey for TY 1988.

We estimated a regression model to assess the probability that an individual with particular observed characteristics would be located, based on the Collection-based segment data for all potential nonfilers. We then used the regression results to adjust the sample weights of 2,198 secured delinquent returns in the Examination-based segment so that these returns represent all delinquent nonfilers, located or unlocated. The Examination-based segment with the adjusted sample weights constitutes the main data source for estimating the nonfiling gap.

Since the TCMP survey-based estimates are only available for TY 1988, we developed a method to predict the nonfiling gap estimates for TYs 1989-1992. Based on the relationship between the nonfiling and underreporting tax gaps for TY 1988, and using estimates of the underreporting gap for timely filed returns generated from the IRS tax model for tax years 1989-1992 and 1984-1987, we developed nonfiling gap estimates for these years.

3. Underpayment Gap

The underpayment gap relates to voluntarily and timely filed tax returns on which a balance due is reported but not paid. It is the sum of the balance due amounts for all such returns, less the sum of the amounts remitted with the returns. Our estimates are based on IRS masterfile tabulations of balance due after remittance for individual returns. These tabulations were available for TYs 1982-1983 and 1987-1989. We interpolated to obtain figures for the years between TY 1983 and TY 1987. Masterfile data on balances due at time of filing from Statistics of Income for TYs 1982-1989 were used to calculate ratios of balance due after remittance to taxes due at time of filing for TYs 1982-1989. The average of these ratios for 1982-1989 was multiplied by the taxes due at time of filing for TYs 1990-1992, to obtain our estimates of insufficient remittance by individuals.

B. Net Tax Gap

The net tax gap is defined as the gross tax gap minus the amount of tax IRS collects for the tax year in question through its enforcement activities. Therefore, once the gross tax gap has been estimated, estimating the net tax gap is essentially a matter of estimating IRS enforcement revenues. Our enforcement revenue estimates are based primarily on IRS masterfile and management information systems data.

IRS management information systems, however, generally report enforcement results (proposed adjustments, actual assessments, and eventual collections) according to the IRS **fiscal** year during which the result occurs, not according to the **tax** year of the tax liability in question. A given fiscal year's enforcement results typically involve tax liabilities associated with many previous tax years. It was, therefore, necessary to translate the available fiscal year enforcement data into equivalent data classified by tax year of liability. The methodologies and data sources used to estimate tax year enforcement revenues for the various components of the tax gap are reviewed below.

1. Underreporting Gap

We estimated enforcement revenues from the examination of individual income tax returns with the help of data from the IRS Audit Information Management System (AIMS). The return-level AIMS data base was used to develop distributions for converting fiscal year AIMS data on recommendations of additional tax into tax year recommendations. Estimated collections of tax,

interest, and penalties were generated from the data on recommendations of additional tax.[16] Finally, we used IRS Direct Enforcement Revenue Report (DERR) data to separate estimated tax collections from estimated interest and penalty collections.[17]

2. Nonfiling Gap

We estimated nonfiling gap enforcement revenues using yield assessments from various individual income tax nonfiler investigation programs. Yield assessments on a fiscal year basis were estimated using Stopfiler Reminder Program (SRP) and Return Delinquency Investigation (RDI) data. These fiscal year assessment estimates were converted to a tax year basis using tax year distributions developed from Collection Research File (CRF) data. Finally, CRF data were also used in converting the tax year assessment estimates into collection estimates.

3. Underpayment Gap

We estimated enforcement revenues from the collection of tax underpayment using IRS masterfile account balance data. From data obtained by tracking the debit balances of a sample of debit-balance Individual Masterfile accounts, we found that an estimated 57 percent of insufficient remittances on the part of individuals was eventually collected.

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[16] The estimates are generated using the "interim method" described in Chapter III of Internal Revenue Service (1990b).

[17] Since interest and penalties are not included in our gross tax gap estimates, including them in our enforcement yield estimates would understate the resulting net tax gap estimates.

APPENDIX A

Nonfiling Gap Estimation And Projection

This Appendix presents the data and methods used for estimating and projecting the individual income tax nonfiling gap. Section 1 summarizes the data structure. Section 2 presents the econometric analysis of the probability of locating potential nonfilers. Section 3 presents sample weight adjustments to account for unlocatable delinquent nonfilers. Section 4 discusses the estimation method for the TY 1988 nonfiling gap. Finally, Section 5 discusses the projection method for the TY 1992 nonfiling gap.

1. Data Structure

Through an intensive match of Social Security, tax, and information return documents, IRS was able to identify a group of "potential nonfilers"—individuals who did not timely file an income tax return for tax year (TY) 1988.[18] A stratified sample of 23,286 was selected from the 88 million potential nonfiler leads. In a TCMP project (Phase IX, Cycle 2), IRS employees investigated the sample leads. The results of the investigations constitute our main data source for estimating the nonfiling gap.

The TCMP project had two components: a Collection-based segment to locate each potential nonfiler in the sample and to secure the delinquent returns if they should have been filed; and a subsequent Examination-based segment to determine the accuracy of a sample of those secured delinquent returns.

In the Collection segment, Revenue Officers attempted to locate each of the 23,286 sample nonfilers. For each individual who was located, revenue officers used information documents, past filing records, and information supplied by the individual to determine whether a return should have been filed, to estimate the amount of tax liability, and, if possible, to secure a tax return if a non-filing violation had occurred; checksheets were completed at the conclusion of the investigations. In the Examination segment, the sampled returns were intensively audited; the results were recorded on checksheets.

Potential Nonfilers

The 23,286 potential nonfilers in the collection-based segment represent a population of 88 million individuals for whom there was no record that a 1988 individual income tax return had been filed. These individuals were identified through a match of IRS tax records with the Social

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[18] IRS's Nonfiler Correlation Process (NCP) generated nonfiler leads by matching all social security numbers ever issued to individuals not recorded as having died against those of individuals who filed an income tax return for tax year 1988. The NCP also matched data from the Individual Master File (IMF), the Returns Transaction File (RTF), and the Information Reporting Master File (IRMF) against TY 1988 filers.

Security Administration Date of Birth/Date of Death Master File.[19] The potential nonfilers identified through this match include delinquent nonfilers as well as individuals who were not required to file returns.

Located Nonfilers

An intensive effort was made by IRS agents to locate each of the individuals in the sample. Information that was known about each individual prior to the investigation is available for analysis, including the individual's age, whether a return had been filed for the previous year, whether a return had ever been filed, and whether information return documents had been filed for TY 1988. A total of 18,689 of the 23,286 potential nonfilers in the sample were located.[20]

Delinquent Nonfilers

Information for the located individuals was reviewed to determine whether a return should have been filed. The IRS Revenue Officers used the information return documents[21] and taxpayers' previous filing information and conducted interviews or field visits to determine if these located individuals had sufficient income to require filing. A total of 4,760 of the 18,689 located individuals were determined to have been in violation of federal income tax filing requirements.

Secured Delinquent Returns

Individual income tax returns were secured in 3,546 of the 4,760 delinquent nonfiler cases. The remaining 1,214 located nonfilers were judged as having a filing requirement but that further IRS enforcement action would be required to resolve the issues.[22]

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[19] Non-residents and individuals without valid social security numbers were excluded.

[20] The collection-based sample weights for these 18,689 individuals sum to approximately 57 percent of the potential nonfiler population. Unlocated individuals in the sample tended to have much larger sample weights as a consequence of the way the sample was stratified.

[21] The information reporting documents include those reporting incomes, such as wages and interest; and those reporting transactions, such as real estate and stock sales.

[22] These enforcement actions include referrals to Examination or Criminal Investigation, as well as IRS preparation of "substitutes for returns."

Examined Returns

The sample for the Examination-based segment of the TCMP nonfiler project consists of 2,198 returns drawn at random from the 3,546 delinquent returns secured in the Collection-based segment. These returns were subjected to the same intensive line-by-line audit as the 54,000 timely filed returns contained in TCMP III-10 survey.

Figure A summarizes the data structure for our nonfiler tax gap estimates.

FIGURE A				
TCMP Nonfiler Survey Data Summary				
Tax Year 1988				
Potential Nonfiler (probability sample of 23,286) Data: For each case, information known to IRS before investigations, including: age, prior filing history, and IRP information	**Located** (18,689) Data: results of investig- ations shown on TCMP Check- sheets	**Delinquent** (4,760) To Estimate: Number, Tax Liability, and Prepayments	**Secured** (3,546) Data: Contents of Returns	**Examined** (probability sample of 2,198) Data: Results of Examinations
				Not Examined (1,348)
			Not Secured (1,214)	
		Not Required To File (13,929)		
	Not located (4,597)	**Delinquent** To Estimate: Number, Tax Liability, Prepayments		
		Not Required To File		

Figure A illustrates how the Phase IX TCMP study produced the sample of 2,198 taxpayers whose secured returns we used to estimate the nonfiling tax gap. For these taxpayers, we have data which are similar in most respects to the data in the Phase III TCMP study of taxpayers who voluntarily and timely filed their 1988 returns. However, before we can apply the methods we use for filers, we must make adjustments to reflect the complicated process by which the data for these 2,198 taxpayers were obtained.

2. Estimating the Probability of Locating Potential Nonfilers

As shown in Figure A, the proportion of the unlocated nonfilers who were required to have filed returns cannot be estimated directly from the TCMP data. A simple assumption would be that this unknown proportion is the same as the proportion observed for the located nonfilers. However, it is possible that the probability of being located is associated with the probability of being required to file. In that case, the assumption would be invalid.

To account for this possibility, we have estimated a regression model for the probability that an individual with particular observed characteristics would be located, based on the data available before the investigations for *all* potential nonfilers. The results of this analysis were then used to calculate, for each of the *located* nonfilers, the ex-ante probability that that individual would be located.

The estimated probability of being located can then be used to adjust the sample weights for the located potential nonfilers. The original sample weights were multiplied by the reciprocals of the estimates of the probability of being located. Roughly speaking, this adjustment causes the unlocated potential nonfilers with a particular combination of observed characteristics to be represented by the located potential nonfilers with the same combination of observed characteristics.

For example, suppose the regression model predicted that potential nonfilers with a certain set of characteristics (e.g. no IRP income, filed prior to 1987 but not since, not over 64 or under 19 years old) had a probability of 0.5 of being located. The sample weights of all located potential nonfilers with these characteristics would be multiplied by 2.0 to account for the finding that for every such potential nonfiler that was located there was another similar potential nonfiler who was not located.

Probit Model Specification

The model-based assessment of the probability of being located involves probit estimation of whether an individual from the potential nonfiler population can be located as a function of observed characteristics.

Using appropriately defined "dummy" variables as regressors in the probit model, we separated all of the potential nonfiler individuals into six mutually exclusive and exhaustive categories, based on returns filed by them and information returns filed concerning them, as shown in the outlined boxes below.

	Was a 1987 Return Filed?			
Yes			**No**	
Was a Pre-1987 Return Filed?		**Was a Pre-1987 Return Filed?**		
Yes	**No**	**Yes**	**No**	
Were 1988 Information Returns Filed?	**Were 1988 Information Returns Filed?**	**Were 1988 Information Returns Filed?**	**Were 1988 Information Returns Filed?**	
Yes	**Yes**	**Yes**	**Yes**	
No	**No**	**No**	**No**	

We also defined dummy variables which separated the potential nonfilers into four categories based on age:

> sixty-five or older;
> older than 18 and younger than 65;
> 18 or younger;
> and unknown.

Finally, we separated the potential nonfilers into the following two categories: record of a spouse on a prior filed return; and no such record. Using these three sets of categories simultaneously, we have forty-eight distinct and exhaustive groups of individuals in our sample.

The dependent variable in the probit model was a dummy variable that had the value one for cases in which the subject individual was located, and the value zero for cases in which the subject individual was not located. Estimation was by maximum likelihood.

Econometric Results

The results are consistent with our prior expectations. Each of the parameter estimates is of expected sign and they all are statistically significant.[23]

Using the coefficients from the probit estimation, we can calculate the probability of an individual's being located for each of the forty-eight groups in our sample. The potential 1988 nonfilers who were most difficult to located had the following characteristics: they had not filed a 1987 return or a return for a prior year; no information documents had been filed for them for Tax Year 1988; their age was unknown; and there was no record of a spouse on a prior return. The estimated probability of locating such individuals was .06.

The most readily located individuals had the following characteristics: they had filed a 1987 return; Tax Year 1988 information documents had been filed concerning them; they were sixty-five years old or older; and IRS had a record of a spouse on a prior return. We estimate the probability of locating such individuals as .97.

Other groups had probabilities of being located between these extremes. For example, individuals who had not filed with a spouse in a prior year, between the ages of 18 and 65, who filed for 1987, but for whom no 1988 information documents were available, had a probability of being located of .68.

The probability of locating single individuals 18 years old or younger, who had not filed in 1987, but had filed in a prior year, and for whom no 1988 information documents were available was .58.

3. Accounting for Unlocatable Delinquent Nonfilers

Using the results from the previous section, we make a series of adjustments to each of the 2,198 examined secured returns' original sample weights. These adjustments make this sample representative of all delinquent returns, whether located or unlocated, secured or unsecured, examined or unexamined.

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[23] For more detailed discussions on model specification and econometric results, see Erard and Ho (1995).

Located Delinquent Nonfilers Representative of All Delinquent Nonfilers

The original collection-based sample weight (WTC) for each of 4,760 located delinquent nonfilers was multiplied by the inverse of the probit model estimated probability of being located (1/PROB) to account for additional unlocated delinquent nonfilers.

$WT1_i = WTC_i * (1/PROB_i)$　$i = 1,....4,760$ (located delinquent nonfilers)

where
　　WT1 = probability adjusted weight
　　WTC = original collection weight
　　PROB = probit model estimated probability of being located

The sum of the WT1 weights is our estimate of the number of delinquent nonfiler individuals in the population.

Accounting for Joint Returns

We divided the sample weights for the secured delinquent returns of married joint nonfilers by 2.0. All else being equal, a delinquent married couple's return has approximately twice the chance of being included in our sample as a delinquent single individual's return. The original sample of potential nonfilers is a sample of individuals. If either member of a couple were included in the sample of located potential nonfilers, their joint return would be included in the resulting sample of delinquent returns.

$WT2_j = WT1_j/2$, for joint returns

　　　$= WT1_j$ for all other returns

The sum of WT2 is our estimate of the number of tax returns owed by the delinquent nonfiler individuals in the population.

Examined Secured Returns Representative of All Delinquent Returns

The $WT2_i$ for each of the 2,198 *examined secured delinquent returns*, was then adjusted so that they sum to the same total as do the weights for the 4,760 *located delinquent nonfilers*. This was done in two steps. First, to account for the sampling rates for the examination sub-sample of secured returns, we multiplied the WT2 weight for each examined return by the reciprocal of the probability with which it was selected. For secured returns with reported positive tax liabilities less than $2,000, this figure was 2.35; for secured returns reporting tax liability of $0 or more than $1,999, the figure was 1.17. Call these adjusted weights WTE. We

then proportionally adjusted each WTE so that their sum would be equal to the sum of the WT2 for all delinquent returns, as follows.

$$WT3_j = WTE_j * S \quad j = 1...2{,}198 \text{ (examined secured delinquent returns)}$$

where

$$S = (WT2\_4760)/(WTE\_2198)$$

WTE_2198 = Sum of WTE_i for 2,198 examined secured delinquent cases

WT2_4760 = Sum of $WT2_i$ for 4,760 located delinquent cases

The sum of the WT3 weights for the 2,198 examined secured returns is our estimate of the number of delinquent 1988 tax returns in the population. It is identical to the estimate we get from summing the WT2 weights for all located delinquent returns. Figure B summarizes our estimates of the numbers of nonfiling individuals and delinquent returns. (Note that in Figure B we use the words "locatable" and "securable" in place of the words "located" and "secured" used in Figure A. The focus of Figure A is the TCMP data; so, for example, the figure reports that of the 23,286 individuals investigated, 18,689 were located. The focus of Figure B is on our estimates of the number of nonfilers in the population; so, for example, the figure reports that we estimate that of 88.5 million individuals who could have been investigated, about 50.4 million could have been found with the kinds of techniques that were used in the TCMP, i.e. they were *locatable*; only 18,689 were *actually located* in the study.)

FIGURE B
Estimates of Number of Nonfilers
Tax Year 1988

n = number of individuals in TCMP sample
N = estimated number of individuals in population (millions)
ν = estimated number of tax returns (millions)

Individual Nonfilers	Locatable	Delinquent	Securable
n = 23,286 N = 88.5	n = 18,689 (80%) N = 50.4 (57%)	n = 4,760 (25%) N = 7.7 (15%) ν = 6.6	n = 3,546 (74%) N = 3.7 (48%) ν = 2.9 (44%)

Individual Nonfilers

n = 23,286
N = 88.5

Locatable

n = 18,689 (80%)
N = 50.4 (57%)

Delinquent

n = 4,760 (25%)
N = 7.7 (15%)
ν = 6.6

Securable

n = 3,546 (74%)
N = 3.7 (48%)
ν = 2.9 (44%)

Not Securable

n = 1,214 (26%)
N = 4.0 (52%)
ν = 3.7 (56%)

Not Required To File

n = 13,929 (75%)
N = 42.7 (85%)

Not Locatable

n = 4,597 (20%)
N = 38.1 (43%)

Delinquent

N = 2.1 (6%)
ν = 1.8

Not Required To File

N = 36.0 (94%)

4. TY 1988 Nonfiling Gap Estimation

The higher estimate of the nonfiling gap is calculated, in millions of dollars, as follows:

$$NFGAP = RTAX + UTAX - PREPAY$$
$$11,164 = 16,937 + 6,433 - 12,206$$

where **RTAX** is the amount of income tax liability *reported* on the 2,198 examined secured returns, weighted up to the population of delinquent nonfilers using the WT3 weights described above; **UTAX** is the *underreporting* of tax liability on those returns, as estimated by our tax gap model, similarly weighted; and **PREPAY** is the aggregate amount of prepayments of tax, as determined by the examiners of the returns, similarly weighted. (The model's lower estimate of UTAX is $6,240 million; the lower estimate of NFGAP is, therefore, $10,971 million.)

RTAX and PREPAY are estimated by straightforward weighted summation and require no further elaboration. Estimation of UTAX is described below. (Our estimation method assumes that the examined secured returns fairly represent the net balances due of not only the unexamined secured returns--which is justified because the examined returns were a probability sample of all secured returns--but also of the unsecured delinquent returns. In principle, we could adjust for possible differences between the amounts owed by the taxpayers whose returns were secured and those whose returns were not secured, using the Collection estimates of balances due based on IRP documents for the secured and unsecured cases. However, the linear correlation between these estimates and the Examination-corrected balances due for the examined cases was only .18. We concluded that the Collection estimates were not accurate enough to justify using them for an adjustment.)

To estimate UTAX we used the net misreported amounts (NMAs) for income and offset items.[24] The estimates were developed using the IRS tax model based on the Examination-based data.

The tax model augments the TCMP-detected net misreported amounts for income items by a set of multipliers[25]. For offset items, TCMP-detected NMAs are considered accurate because the TCMP examiners can require the taxpayers to provide support for the claimed offsets. Since the TCMP examiners were provided with IRP documents for TY 1988 secured

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[24] For an income item, the NMA is defined as the sum of all amounts underreported minus the sum of all amounts overreported on the item. For an offset item, the NMA is defined as the sum of all amounts overstated minus the sum of all amounts understated on the item. For more detailed discussions on the NMA, see Ho (1994).

[25] These multipliers are based on an IRS study of a sub-sample of the 1976 TCMP filer survey. The study found that, on average, for every dollar of underreported income detected by TCMP examiners without the aid of the IRP documents, another $2.28 went undetected.

delinquent returns, only the non-IRP portion of TCMP detected income was expanded by the multiplier.[26]

The model summarized all multiplier-augmented NMAs for income items and imputed the total to all returns through a statistical matching procedure.[27] For each income item, the model executed the matching process separately and calibrated the total imputed NMAs to replicate the estimated multiplier-augmented NMA total.[28] The model assigned the detected tax due to all misreported line items on a return in proportion to their multiplier-augmented NMAs and summarized all multiplier-augmented NMAs and model-imputed tax due for each line item to calculate its marginal tax rate. The results are displayed in Tables A1, A2, and A3.

TABLE A1 Multiplier-Expanded Underreported Income Estimates Positive Income Items TY 1988 Nonfilers				
Income Item	**IRP Detected ($millions)**	**Non-IRP Detected ($millions)**	**Effective Multiplier**	**Underreported Amount ($millions)**
Wage Income	171	428	3.28	**1,575**
Interest Income	257	62	3.28	**460**
Dividends	175	39	3.28	**303**
State Income Tax Refunds	2	18	1.00	**20**
Alimony Income	0	2	3.28	**7**
Pensions & Annuities	0	511	3.28	**1,676**
Unemployment Compensation	3	55	3.28	**183**
Social Security Benefits	0	11	3.28	**36**

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[26] The IRP-detected portions of the underreported income for all income sources were not available in TCMP IX-2 nonfiler survey data. We used a nearest neighbor hot deck method to impute these IRP-detected portions from TCMP III-10 filer survey data. For more detailed discussions, see Ho and Wong (1994).

[27] Statistical matching is a variation on the data allocation procedures called "hot decking" used by the Bureau of the Census and other survey research organizations. For more detailed discussions, see Ho and Wong (1995).

[28] The imputation algorithm divides those with TCMP non-IRP detected wages, for example, into 480 homogenous groups using 5 types of matching variables: reported total positive income, primary income source, age of taxpayer, itemization, and filing status. These variables were selected because they are likely to be correlated with the likelihood of having a particular form of non-reported wage income.

			TABLE A2		
		Multiplier-Expanded Underreported Income Estimates		
		Loss-Included Income Items		
		TY 1988 Nonfilers		
Income Item	**IRP Detected ($millions)**	**Non-IRP Detected ($millions)**	**Effective Multiplier**	**Underreported Income ($millions)**
Capital Gains				**2,711**
Overstated Basis	0	813	1.00	813
Other	55	562	3.28	1,898
Form 4797 Income				**200**
Understated Receipts	4	36	3.28	122
Overstated Basis	0	78	1.00	78
Farm Income				**2,232**
Understated Income	0	885	2.40	2,124
Overstated Expenses	0	108	1.00	108
Informal Supplier Income[29]				**1,262**
Nonfarm Proprietor Income				**17,617**
Understated Income	251	4,189	2.40	10,305
Overstated Expenses	0	7,312	1.00	7,312
Partnership & SBC Income				**803**
Understated Income	0	219	3.28	718
Overstated Expenses	0	85	1.00	85
Rents & Royalties				**741**
Understated Income	4	43	2.27	102
Overstated Expenses	0	639	1.00	639
Other Income				**4,226**
Non Tax Shelter	31	1,072	3.28	3,547
Tax Shelter	19	660	1.00	679

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[29] We estimate that in 1988 nonfarm informal suppliers earned about $62 billion net income, of which about $6.8 billion was earned by nonfilers. (See Appendix B for greater detail.) Our model estimates that about $5.6 billion was associated with securable "returns." The income tax on this amount is therefore included in RTAX. Tax on the remaining $1.262 billion of nonfiler nonfarm informal supplier income is calculated by the model for inclusion in UTAX.

TABLE A3 TY 1988 Nonfiler UTAX Estimates			
Tax Gap Component	**Net Misreported Amount ($millions)**	**Marginal Tax Rate**	**UTAX Estimate ($millions)**
Wage Income	1,575	0.20444	322
Interest Income	460	0.14977	69
Dividends	303	0.14481	44
State Income Tax Refunds	20	0.13325	3
Alimony Income	7	0.14654	1
Capital Gains	2,711	0.25446	690
Form 4797 Income	200	0.15724	31
Pensions & Annuities	1,676	0.20003	335
Farm Income	2,232	0.10017	224
Informal Supplier Income	1,262	0.18018	227
Nonfarm Proprietor Income	17,617	0.11987	2,112
Partnership & SBC Income	803	0.22074	177
Rents & Royalties	1,179	0.24725	292
Other Income	4,226	0.24440	1,033
Unemployment Compensation	183	0.14241	26
Social Security Benefits	36	0.16546	6
Adjustments	67	0.16403	11
Deductions	1,347	0.23137	312
Exemptions	1,366	0.20034	274
Tax Credits	244	1.00000	244
TOTAL UTAX	n.a.	n.a.	**6,433**

5. TY 1992 Nonfiling Gap Projection

Since the TCMP nonfiler survey data are available only for TY 1988[30], we require methods to project the nonfiling gap estimates for the years beyond TY 1988.

Reported taxes after credit for filers (RTF) was selected as a projection basis for nonfiler RTAX and PREPAY. The estimated underreporting gap for filers (UGF) was selected as a projection basis for nonfiler UTAX. For each income/offset item, holding filers' noncompliance rate constant over time, the growth factor of the underreporting gap for filers is likely to be identical for each income item to the growth factor of the UTAX for nonfilers.

The TY 1988 RTF and UGF estimates are generated from the IRS tax model based on the TCMP III-10 survey data. The TY 1992 RTF and UGF projections are obtained from the IRS compliance projection model based on the Statistics of Income (SOI) data on reported incomes.

Table A4 presents RTAX and PREPAY projections for TY 1992.

Table A4 TY 1992 Nonfiler RTAX And PREPAY Projections						
Reported Taxes After Credits For Filers ($ millions)		Projection Factor	RTAX ($ millions)		PREPAY ($ millions)	
TY 1988	TY 1992		TY 1988	TY 1992	TY 1988	TY 1992
392,576	465,417	1.1855	16,937	20,079	12,206	14,470

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[30] TCMP Phase IX, Cycle 1 nonfiler survey was conducted using TY 1979 data. But it was limited to projections of nonfilers based on IRP documents received by IRS and could not be used, therefore, for comprehensive nonfiler tax gap estimates.

Table A5 presents nonfiler UTAX projections for TY 1992.

Tax Gap Component	Filer Underreporting Gap ($millions)		Projection Factor	Nonfiler UTAX ($millions)	
	TY 1988	**TY 1992**		**TY 1988**	**TY 1992**
Wage Income	2,685	3,174	1.18212	322	381
Interest Income	1,107	938	0.84734	69	58
Dividends	1,318	1,299	0.98558	44	43
State Income Tax Refunds	15	15	1.00000	3	3
Alimony Income	88	84	0.95455	1	1
Capital Gains	3,296	2,512	0.76214	690	526
Form 4797 Income	572	718	1.25524	31	39
Pensions & Annuities	1,422	1,842	1.29536	335	434
Farm Income	1,721	3,405	1.96281	224	443
Informal Supplier Income	10,762	12,282	1.14124	227	259
Nonfarm Proprietor Income	14,378	16,862	1.17276	2,112	2,477
Partnership & SBC Income	2,427	3,606	1.48578	177	263
Rents & Royalties	1,981	3,737	1.88642	292	551
Other Income	5,049	7,587	1.50267	1,033	1,552
Unemployment Compensation	138	343	2.48551	26	65
Social Security Benefits	122	179	1.46721	6	9
Adjustments	162	202	1.24691	11	14
Deductions	4,312	5,109	1.18483	312	370
Exemptions	2,686	2,923	1.08824	274	298
Tax Credits	4,117	6,213	1.50911	244	368
TOTAL	n.a.	n.a.	n.a.	**6,433**	**8,154**

Table A5
TY 1992 Nonfiler UTAX Projections

The higher nonfiling gap projections for tax year 1992 are calculated, in millions of dollars, as follows:

NFGAP = RTAX + UTAX - PREPAY
 13,763 = 20,079 + 8,154 - 14,470

Applying the ratio of the lower estimate to the higher estimate for TY 1988 to the TY 1992 projection of UTAX, gives us a lower projection of $7,909 million; the lower projection of NFGAP is, therefore, $13,518 million.

APPENDIX B

Underreporting Gap Estimation And Projection

This Appendix presents the data and methods used for estimating and projecting the individual income tax underreporting gap. Section 1 outlines the general framework. Section 2 discusses the estimation method for the TY 1988 underreporting gap. Section 3 describes the method for projecting the TY 1992 underreporting gap.

1. General Framework

The methods for generating the underreporting tax gap estimates of this report are identical to those used for IRS's last income tax gap report [IRS 1988a]. The computer models developed for the previous estimates were used without modification for the current estimates. These methods and models were described in detail in our 1988 report and supporting documents.[31] Accordingly, this appendix contains only brief summaries of the methods.

The underreporting tax gap estimates published in 1988 were derived by applying the methods described in the 1988 appendices to TY 1979 and TY 1982 TCMP data. For this report, we applied our methods to 1985 and 1988 TCMP data, the latest available. (The estimates for TY 1987 were made by linear interpolation of voluntary reporting percentages between 1985 and 1988, for each income item and for deductions, adjustments, credits, and exemptions separately.) The projections for TY 1992 were made by assuming that the voluntary reporting percentages for each tax return line item remain constant at the TY 1988 levels; these percentages are applied to the actual Statistics of Income (SOI) amounts reported for each item in 1992. The marginal tax rates applied to projections of understated income and overstated offsets were calculated by the models.   The tax rate calculation reflects the Omnibus Budget Reconciliation Act of 1990.

A. TCMP Survey Data

The TCMP Phase III, Cycle 10 survey gathered data on a national stratified sample of approximately 54,000 individual income tax returns randomly drawn from a population of approximately 104 million timely filed returns for TY 1988. The 1985 TCMP (Phase III, Cycle-9) gathered data on about 49,000 returns, representing 99 million timely filed returns.

TCMP examiners review all entries on the returns in light of the taxpayers' records and other available information. These intensive line-by-line examinations reveal misreporting of income and offsets. Using weights equal to the reciprocals of the probabilities of selection for the returns in the sample, estimates of aggregate misreporting by the entire population of tax return filers can be obtained.

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[31] The primary sources of information are IRS income tax compliance research publications (IRS [1988a,b]) and ICF Incorporated's IRS tax model user guides (ICF [1988a,b]).

B. Special Survey Data

Data from special IRS-sponsored surveys were used to develop underreporting gap estimates for tip income and informal supplier income. The special survey data were extrapolated to tax years for which TCMP surveys were conducted and then imputed to individual records by the IRS tax gap model in order to generate underreporting gap estimates for tip income and informal supplier income.[32]

C. IRS Tax Gap Model

The IRS tax gap model consists of two components. The tax imputation model provides estimates for reported amounts, net misreported amounts, and marginal tax rates for all income and offset line items on individual returns for TCMP years. The tax compliance model provides underreporting gap estimates and voluntary reporting percentages for tax years 1976-1988.

Multiplier-Augmented Underreported Income

Since TCMP data understate reporting noncompliance to the extent TCMP examinations do not detect all underreported income, the tax model augments the TCMP data with estimates of underreported income not detected by TCMP.

These estimates of additional undetected income are based on an IRS study of a sub-sample of the TY 1976 TCMP survey of individual timely filed returns. The study found that, on average, for every dollar of underreported income detected by TCMP examiners without the aid of the Information Reporting Program (IRP) documents, another $2.28 went undetected. As a result, the model uses a "multiplier" of 3.28 to expand the aggregate amounts of underreported income detected in TCMP without the aid of IRP documents. (There are several modifications to this procedure for particular income items, especially business income.)

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[32] The underreported tip income estimates are based on consumer surveys conducted by the Survey Research Laboratory of the University of Illinois (see Pearl [1985a,b]). The underreported informal supplier income estimates are based on consumer surveys conducted by the Survey Research Center of the University of Michigan (see Smith and Adams [1987]).

The tax model calculates multiplier-augmented underreported amounts for each income type and imputes unreported income of each type to particular returns through a "hot-deck" statistical matching procedure. For each income type, the model calibrates the total imputed underreported amounts so that the weighted sum over all returns is exactly equal to the estimated aggregate multiplier-augmented underreported amount.[33]

TCMP-Detected Overstated Offsets

For all offset items, TCMP-detected overstated amounts are considered accurate because in a TCMP audit the examiner can request substantiation for claimed offsets.

Average Marginal Tax Rate

For each tax return, the tax model recalculates the total tax liability including the additional tax due on the imputed underreported income. The difference between the tax liability reported on the return as filed and this augmented tax liability (tax deficiency) is assigned to the misreported line items on the return in proportion to their multiplier-augmented net misreported amounts. For each line item, the model aggregates (across all returns) all multiplier-augmented net misreported amounts and tax deficiencies. The ratio of aggregate tax deficiency to aggregate misreporting is the estimate of the average marginal tax rate for the item.

2. TY 1988 Underreporting Gap Estimation

For this report, we prepared new estimates of the underreporting gap for TY 1985 and 1988, based on new TCMP data for those years and on projections of our 1981 and 1985 informal supplier survey data. Since the methods are identical for the 1985 and 1988 estimates, we show details of the intermediate results only for 1988 in this section. However, the detailed final results are shown for both 1985 and 1988, as well as the projections for 1992, in Section 4 of this appendix.

A. Underreported Informal Supplier Income

Informal suppliers (IS) are individuals who provide products or services through informal arrangements which frequently involve cash-related transactions or "off the books" accounting practice. Child-care providers, street-side vendors, and moonlighting professionals are among this type of nonfarm sole proprietor.

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[33] The methodology described above corresponds to the procedures used to develop the "higher" estimates presented in the tax gap report. These "higher" estimates do not reflect that some of the adjustments made in the examinations are conceded after all appeals and litigation have been completed.

The underreported IS income estimates are based on two sources. The Michigan survey provides the estimates for what should have been reported for TY 1988 by informal suppliers.[34] The IRS tax model estimated the amount of reported Schedule C income for TY 1988 filers in the TCMP data who were likely to have been informal suppliers.

Michigan Survey Estimated Income

The primary approach taken in the Michigan survey was to measure the value of purchases households made from informal suppliers. The survey estimated the amount of income paid to informal suppliers by consumers during 1981 and 1985. These estimates represent total gross receipts received by informal suppliers.[35]

Based on the Michigan survey results, the model estimated the gross income of informal suppliers by subtracting the earnings of domestic employees from, and adding the sales to businesses to, total gross receipts.[36] Based on a previous IRS study [IRS 1988b], the net income of informal suppliers accounts for 51 percent of their gross income. The model then estimated informal supplier income by adding barter income to net income.[37]

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[34] The Michigan survey provides informal supplier income estimates for 1981 and 1985. These estimates were extrapolated to three TCMP years: 1982; 1985; and 1988.

[35] Total informal supplier gross receipts were estimated to be $56.7 billion in 1981 and $72.4 billion in 1985.

[36] Total informal supplier gross income was estimated to be $76.7 billion in 1981 and $93.1 billion in 1985.

[37] IRS estimated that informal supplier barter income in 1985 was $6.3 billion. The TY 1988 barter income was estimated to be the same proportion of gross informal supplier income as it was in 1985.

Table B1 presents informal supplier income estimates for tax year 1988 based on the Michigan survey results and the IRS adjustment process described above.

TABLE B1 Survey-Based Informal Supplier Income Estimates Tax Year 1988 ($ millions)	
Income Formulation	**Amount**
Gross Income (GI)	107,551
Net Income (NI)	54,851
Barter Income (BI)	7,298
Informal Supplier Income (SI = NI + BI)	**62,149**

TCMP Survey Reported Amount

Through a correlation of occupation code, industry code, income, and business expenses, certain Schedule C filers within the TCMP data were classified as likely to have been informal suppliers.[38] Reported informal supplier income includes amounts originally reported on the return that meet the selection criteria, plus, any reported income reclassified by the examiners which also meets these criteria.[39]

Double-Counting Adjustments

The underreported business income identified in the TCMP cases described above, weighted up to a population estimate, is "backed out" of our estimate of unreported nonfarm proprietor income, to avoid double counting informal supplier unreported income. The estimate for TY 1988 is $2.3 billion: $1 billion of understated gross receipts and $1.3 billion of overstated business expenses.

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[38] A TCMP taxpayer was considered to be an informal supplier if he/she had income which appeared to be from an occupation covered by the Michigan survey, and did not report any of the business expenses which formal business activities typically incur, such as taxes, rent, insurance, pension or employee benefit plan contributions, legal fees and bad debts.

[39] Filers may report the proper amount of nonfarm business income, but on the wrong line of the return. For example, some taxpayers reported self-employment income as wages. In this instance, the TCMP examiners reclassified the income to Schedule C to reflect gross receipts properly.

Some informal suppliers do not file required income tax returns. Since the University of Michigan data do not differentiate between purchases from nonfiler informal suppliers and other informal suppliers, our estimates of informal supplier underreporting must be reduced by an estimate of the business income of informal supplier nonfilers. We assume that nonfiler informal supplier income is 10.98 percent of total informal supplier income.[40] (This assumption, which was based on very weak information, was quite critical in IRS's 1988 estimates. The nonfiler portion of the tax gap estimate was based on the Bureau of the Census's "exact match" public use files. In this report, the nonfiler and filer estimates are obtained from similar methods applied to similar data. And, it turns out that the marginal tax rates for informal supplier income derived from these methods are very similar for filers and nonfilers. Therefore, the assumed division of informal supplier net income between filers and nonfilers does not dramatically affect the estimate of the total tax gap associated with this type of income.)

Underreported Amount

Table B2 presents the estimates of survey-based income, the nonfiler portion of IS income, the TCMP based reported income, and the underreported income for TY 1988. The estimate of underreported income appears in Table B4.

TABLE B2 Underreported Informal Supplier Income Estimates Tax Year 1988 ($ millions)	
Income Formulation	**Amount**
Survey Based Income (SI)	62,149
Nonfiler Portion Income (NF)	6,824
TCMP Reported Income (RI)	6,392
Underreported Income (UI= SI-NF-RI)	**48,933**

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[40] This is the percentage used for this purpose in our 1988 report for tax years 1985 and 1982. See Internal Revenue Service (1988b), p. A51.

B. Multiplier-Expanded Underreported Income

Table B3 presents the multiplier-expanded underreported income estimates for all income items except nonfarm informal supplier income, whose estimates were presented in Table B2.

C. Underreporting Gap

Table B4 presents the net misreported amount, marginal tax rate, and underreporting gap estimates for each income and offset item. Note that the misreported amounts of offset items represent the TCMP-detected overstated offsets. It also presents TY 1988 math error estimates.

TABLE B3
TY 1988 Multiplier-Expanded Underreported Income Estimates

Income Item	IRP Detected ($millions)	Non-IRP Detected ($millions)	Effective Multiplier	Underreported Income ($millions)
Wage Income				**19,880**
Wages & Salaries	1,801	1,970	3.28	8,263
Tips	n.a.	n.a.	n.a.	11,617
Interest Income	1,963	663	3.28	**4,138**
Dividends	4,218	565	3.28	**6,071**
State Income Tax Refunds	91	0	1.00	**91**
Alimony Income	46	93	3.28	**350**
Capital Gains				**12,215**
Overstated Basis	0	6,920	1.00	6,920
Other	5,188	33	3.28	5,295
Form 4797 Income	1,371	478	3.28	**2,938**
Pensions & Annuities	1,236	1,564	3.28	**6,366**
Farm Income				**8,698**
Understated Income	254	1,936	2.40	4,899
Overstated Expenses	0	3,799	1.00	3,799
Nonfarm Proprietor Income				**61,024**
Understated Income	1,234	17,735	2.40	43,800
Overstated Expenses	0	17,224	1.00	17,224
Partnership & SBC Income				**11,596**
Understated Income	48	3,104	3.28	10,230
Overstated Expenses	0	1,366	1.00	1,366
Rents & Royalties				**9,433**
Understated Income	345	1,433	2.27	3,597
Overstated Expenses	0	5,836	1.00	5,836
Other Income				**23,545**
Non Tax Shelter	4,337	4,246	3.28	18,263
Tax Shelter	2,669	2,613	1.00	5,282
Unemployment Compensation	809	14	3.28	**855**
Social Security Benefits	403	204	1.00	**607**

TABLE B4 TY 1988 Underreporting Gap Estimates			
Tax Gap Component	**Net Misreported Amount ($ millions)**	**Marginal Tax Rate**	**Underreporting Gap ($ millions)**
Wage Income	19,880	0.13508	2,685
Interest Income	4,138	0.26746	1,107
Dividends	6,071	0.21710	1,318
State Income Tax Refunds	91	0.16761	15
Alimony Income	350	0.24982	88
Capital Gains	12,215	0.26983	3,296
Form 4797 Income	2,938	0.19483	572
Pensions & Annuities	6,366	0.22337	1,422
Farm Income	8,698	0.19784	1,721
Informal Supplier Income	48,933	0.21994	10,762
Nonfarm Proprietor Income	61,024	0.23562	14,378
Partnership & SBC Income	11,596	0.20932	2,427
Rents & Royalties	9,433	0.21004	1,981
Estates & Trusts	0	n.a.	0
Other Income	23,545	0.21443	5,049
Unemployment Compensation	855	0.16099	138
Social Security Benefits	607	0.20078	122
Adjustments	522	0.31033	162
Deductions	16,352	0.26371	4,312
Exemptions	17,660	0.15208	2,686
Tax Credits	4,117	1.00000	4,117
Net Math Errors	n.a.	n.a.	167
TOTAL	n.a.	n.a.	**58,517**

3. TY 1992 Underreporting Gap Projections

The model calculates reported amounts for years after the last available TCMP based on the Statistics of Income (SOI) data on reported incomes and offsets for those years for which SOI data are available.[41] Assuming that compliance rates for every line item have remained at the levels estimated for the last TCMP year, the model provides projections of net misreported amounts.

To reflect the changes in income tax rates enacted in the *Omnibus Budget Reconciliation Act of 1990*, we estimated marginal tax rates using 1991 individual income tax tables and 1988 TCMP filer data.

Underreporting gap estimates by line item are derived by multiplication of the marginal tax rates and the projected misreported amounts. Table B5 presents the TY 1992 projections for net misreported amounts, marginal tax rates, and underreporting gap estimates. It also presents TY 1992 projected math errors.

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[41] In general, SOI estimates differ from those reported in TCMP for years where TCMP data are available. The primary reason for this is that SOI is based on a different sample of returns than is TCMP. In addition, the SOI data include certain adjustments which are not included in TCMP. In order to make these data comparable, the tax compliance model adjusts the SOI data to reflect TCMP estimates of reported incomes and offsets.

TABLE B5
TY 1992 Underreporting Gap Projections

Tax Gap Component	Net Misreported Amount ($ millions)	Marginal Tax Rate	Underreporting Gap ($ millions)
Wage Income	23,993	0.13230	3,174
Interest Income	3,592	0.26104	938
Dividends	6,071	0.21394	1,299
State Income Tax Refunds	91	0.16761	15
Alimony Income	350	0.24126	84
Capital Gains	9,399	0.26735	2,512
Form 4797 Income	3,877	0.18512	718
Pensions & Annuities	8,566	0.21502	1,842
Farm Income	17,961	0.18960	3,405
Informal Supplier Income	59,620	0.20604	12,282
Nonfarm Proprietor Income	74,415	0.22667	16,862
Partnership & SBC Income	17,239	0.20923	3,606
Rents & Royalties	19,441	0.19229	3,737
Other Income	35,938	0.21112	7,587
Unemployment Compensation	2,310	0.14873	343
Social Security Benefits	979	0.18245	179
Adjustments	655	0.30856	202
Deductions	19,910	0.25669	5,109
Exemptions	21,443	0.13632	2,923
Tax Credits	6,213	1.00000	6,213
Net Math Errors	n.a.	n.a.	59
TOTAL	n.a.	n.a.	**73,089**

4. Lower Underreporting Gap Estimates

The previous sections describe the methods by which our "higher" estimates of the underreporting gap were made. To a major extent, these estimates are based on the findings of the IRS examiners who reviewed the TCMP tax returns. Our "lower" estimates are intended to reflect the likely amounts by which the examiners' recommended tax deficiencies would have been reduced after all appeals and litigation concerning the cases were concluded. The concept of the lower estimates is discussed in IRS [1990a], pp. 13-15.

The lower estimates are derived by multiplying the higher estimates of the components of the underreporting gap by .97 and summing the results. The derivation of this factor is also discussed in IRS [1990a]. This is done for every component except those for which the estimates are made without the use of examination results--informal suppliers, tip income (included in wages and salaries), and math errors. The same factor is used for every year.

Tables B6, B7, and B8 display the final higher and lower estimates of the underreporting gap and the components for TYs 1985, 1988, and 1992 respectively.

TABLE B6 Range of Estimates of the Underreporting Tax Gap by Specific Items (Net Misreporting Amounts and Net Misreporting Percentages) Tax Year 1985						
Tax Gap Component	**Underreporting Tax Gap ($ billions)**		**Net Misreported Amount ($ billions)**		**Net Misreporting Percentage**	
	Low	**High**	**Low**	**High**	**Low**	**High**
TOTAL UNDERREPORTING GAP	**52.2**	**53.5**	**194.8**	**199.3**	**n.a.**	**n.a.**
UNDERREPORTED INCOME	**43.6**	**44.6**	**163.2**	**166.7**	**n.a.**	**n.a.**
Non-Business Income	**15.6**	**15.9**	**53.6**	**55.0**	**2.2**	**2.4**
Wage Income	2.2	2.2	11.0	11.1	0.6	0.6
Interest Income	1.1	1.1	4.3	4.4	2.4	2.5
Dividends	1.6	1.6	5.0	5.1	9.6	9.9
State Tax Refunds	0.1	0.1	0.4	0.4	4.5	4.6
Alimony Income	0.1	0.1	0.2	0.2	5.9	6.1
Pensions & Annuities	0.5	0.5	2.3	2.4	2.2	2.3
Unemployment Compensation	0.2	0.2	1.3	1.4	16.4	16.9
Social Security Benefits	0.1	0.1	0.5	0.5	4.9	5.0
Capital Gains	3.5	3.6	9.8	10.1	13.4	13.8
Form 4797 Income	0.5	0.5	1.7	1.8	21.8	22.5
Other Income	5.7	5.9	17.0	17.4	36.1	37.2
Business Income	**28.0**	**28.7**	**109.6**	**111.7**	**29.8**	**30.4**
Nonfarm Proprietor Income	13.0	13.4	48.6	50.1	33.9	35.0
Informal Supplier income	10.6	10.6	40.5	40.5	72.8	72.8
Farm Income	1.8	1.9	8.2	8.4	30.4	31.3
Rents & Royalties	1.9	2.0	8.7	9.0	16.5	17.0
Estate and Trust Income	<0.05	<0.05	0.1	0.1	1.7	1.8
Partnership & SBC Income	0.8	0.8	3.5	3.6	2.5	2.6
OFFSETS TO INCOME	**6.6**	**6.7**	**29.4**	**30.3**	**4.3**	**4.4**
Adjustments	0.7	0.7	3.5	3.6	3.9	4.0
Deductions	4.3	4.4	15.1	15.5	4.1	4.2
Exemptions	1.6	1.6	10.8	11.2	4.7	4.8
TAX CREDITS	**2.2**	**2.3**	**2.2**	**2.3**	**25.4**	**26.2**
NET MATH ERRORS	**-0.2**	**-0.2**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

Tax Gap Component	Underreporting Tax Gap ($ billions)		Net Misreported Amount ($ billions)		Net Misreporting Percentage	
TABLE B7 **Range of Estimates of the Underreporting Tax Gap by Specific Items** **(Net Misreporting Amounts and Net Misreporting Percentages)** **Tax Year 1988**						
	Low	High	Low	High	Low	High
TOTAL UNDERREPORTING GAP	**57.1**	**58.5**	**249.5**	**255.4**	**n.a.**	**n.a.**
UNDERREPORTED INCOME	**46.0**	**47.1**	**212.0**	**216.7**	**n.a.**	**n.a.**
Non-Business Income	**15.4**	**15.8**	**75.0**	**77.1**	**2.5**	**2.6**
Wage Income	2.6	2.7	19.6	19.9	0.9	0.9
Interest Income	1.1	1.1	4.0	4.1	2.2	2.3
Dividends	1.3	1.3	5.9	6.1	7.6	7.8
State Tax Refunds	<0.05	<0.05	0.1	0.1	0.8	0.8
Alimony Income	0.1	0.1	0.3	0.4	13.0	13.3
Pensions & Annuities	1.4	1.4	6.2	6.4	3.9	4.0
Unemployment Compensation	0.1	0.1	0.8	0.9	6.7	6.9
Social Security Benefits	0.1	0.1	0.6	0.6	4.1	4.2
Capital Gains	3.1	3.2	11.8	12.2	6.9	7.2
Form 4797 Income	0.6	0.6	2.8	2.9	27.1	28.0
Other Income	4.9	5.1	22.8	23.5	24.2	24.9
Business Income	**30.6**	**31.3**	**137.0**	**139.6**	**29.4**	**30.0**
Nonfarm Proprietor Income	13.9	14.4	59.2	61.0	31.3	32.3
Informal Supplier Income	10.8	10.8	48.9	48.9	81.4	81.4
Farm Income	1.7	1.7	8.4	8.7	31.3	32.2
Rents & Royalties	1.9	2.0	9.2	9.4	16.6	17.2
Estate and Trust Income	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Partnership & SBC Income	2.3	2.4	11.3	11.6	7.2	7.5
OFFSETS TO INCOME	**6.9**	**7.2**	**33.5**	**34.6**	**4.3**	**4.4**
Adjustments	0.2	0.2	0.5	0.5	1.9	2.0
Deductions	4.2	4.3	15.9	16.4	4.3	4.4
Exemptions	2.6	2.7	17.1	17.7	4.4	4.5
TAX CREDITS	**4.0**	**4.1**	**4.0**	**4.1**	**38.9**	**40.2**
NET MATH ERRORS	**0.2**	**0.2**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

TABLE B8
Range of Estimates of the Underreporting Gross Tax Gap by Specific Items
(Net Misreported Amounts and Net Misreporting Percentages)
Tax Year 1992

Tax Gap Component	Underreporting Tax Gap ($ billions)		Net Misreported Amount ($billions)		Net Misreporting Percentage	
	Low	**High**	**Low**	**High**	**Low**	**High**
TOTAL UNDERREPORTING GAP	**71.3**	**73.1**	**323.7**	**331.9**	**n.a.**	**n.a.**
UNDERREPORTED INCOME	**57.2**	**58.6**	**277.0**	**283.7**	**n.a.**	**n.a.**
Non-Business Income	**18.1**	**18.7**	**92.3**	**95.2**	**2.5**	**2.6**
Wage Income	3.1	3.2	23.3	24.0	0.9	0.9
Interest Income	0.9	0.9	3.5	3.6	2.2	2.3
Dividends	1.3	1.3	5.9	6.1	7.6	7.8
State Tax Refunds	<0.05	<0.05	0.1	0.1	0.8	0.8
Alimony Income	0.1	0.1	0.3	0.3	13.0	13.3
Pensions & Annuities	1.7	1.8	8.3	8.6	3.9	4.0
Unemployment Compensation	0.3	0.3	2.2	2.3	6.7	6.9
Social Security Benefits	0.2	0.2	1.0	1.0	4.1	4.2
Capital Gains	2.4	2.5	9.1	9.4	6.9	7.2
Form 4797 Income	0.7	0.7	3.8	3.9	27.1	28.0
Other Income	7.4	7.6	34.8	35.9	24.1	24.9
Business Income	**39.1**	**39.9**	**184.7**	**188.5**	**29.4**	**30.0**
Nonfarm Proprietor Income	16.4	16.9	72.2	74.4	31.3	32.3
Informal Supplier Income	12.3	12.3	59.6	59.6	81.4	81.4
Farm Income	3.3	3.4	17.4	17.9	31.3	32.2
Rents & Royalties	3.6	3.7	18.8	19.4	16.6	17.2
Estate and Trust Income	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Partnership & SBC Income	3.5	3.6	16.7	17.2	7.2	7.5
OFFSETS TO INCOME	**8.0**	**8.2**	**40.7**	**42.0**	**4.3**	**4.4**
Adjustments	0.2	0.2	0.7	0.7	1.9	2.0
Deductions	5.0	5.1	19.3	19.9	4.3	4.4
Exemptions	2.8	2.9	20.7	21.4	4.4	4.5
TAX CREDITS	**6.0**	**6.2**	**6.0**	**6.2**	**38.9**	**40.2**
NET MATH ERRORS	**0.1**	**0.1**	**n.a.**	**n.a.**	**n.a.**	**n.a.**

APPENDIX C

Underpayment Gap Estimation And Projection

This Appendix presents the data and methods used for estimating and projecting the individual income tax underpayment gap. Section 1 outlines the general framework. Section 2 discusses the estimating method for the TY 1988 underpayment gap. Section 3 describes the method by which we projected the TY 1992 underpayment gap.

1. General Framework

The underpayment gap component includes reported tax balances due that are not remitted when individuals file their income tax returns. It applies only to individual income tax filers (Form 1040) and reflects situations in which taxpayers file income tax returns with a balance due, but fail to remit the full amount due.

Our estimates of underpayment by individuals are based on extracts from the Individual Master File (IMF) of balances due after remittance for Forms 1040. The extracts show the balances due reported on returns and remittances made at the time of filing.

2. Underpayment Gap Estimation

The balance due after remittance **(BDAR)** is the aggregate of the insufficient remittances by individuals shown in the IMF extracts. The BDAR estimates based on the IMF extract studies are available for tax years 1982, 1983, 1987, 1988, and 1989. The BDAR estimates for TYs 1984-1986 in Table C1 are based on the interpolation of TYs 1982-1983 and 1987-1989.

TABLE C1 Balance Due After Remittance Estimates Tax Years 1982-1989	
Tax Year	**Amount ($ millions)**
1982	4,179
1983	4,444
1984	6,069
1985	7,046
1986	8,024
1987	10,088
1988	11,243
1989	9,187

3. Underpayment Gap Projection

STEP 1: *Balance Due Underpayment Ratio*

The ratio of balance due after remittance (BDAR) to balance due (BD) represents the balance due underpayment ratio (BDUR). The BDUR is calculated by the following formula:

[1] $BDUR_t = BDAR_t / BD_t$ $t = 1982, ... 1989$

Table C2 presents the BDUR estimates for Tax years 1982-1989. The balance due amounts are Statistics of Income estimates. The Balance Due After Remittance figures are from Table C1.

	TABLE C2		
	Balance Due Underpayment Ratio		
	Tax Years 1982-1989		
Tax Year	**Balance Due** **($ millions)**	**Balance Due** **After Remittance** **($ millions)**	**Balance Due** **Underpayment** **Ratio**
1982	29,053	4,179	0.1438
1983	28,436	4,444	0.1563
1984	36,737	6,069	0.1652
1985	39,091	7,046	0.1802
1986	53,819	8,024	0.1491
1987	49,921	10,088	0.2021
1988	61,508	11,243	0.1828
1989	60,157	9,187	0.1527
AVERAGE	**n.a.**	**n.a.**	**0.1665**

***STEP 2**: Projected Balance Due After Remittance*

The projected balance due after remittance (BDAR^) for tax years 1990-1992 can be obtained by the following formula:

[2] $BDAR\hat{}_t = BD_t * AVGBDUR$ t= 1990,...1992

AVGBDUR = average BDUR for tax years 1982-1989

Table C3 presents these BDAR projections for tax years 1990-1992. The Balance Due figures are Statistics of Income estimates. The Average Balance Due Underpayment Ratio is from Table C2.

TABLE C3 Balance Due After Remittance Projections Tax Years 1990-1992			
Tax Year	**Balance Due** **($ millions)**	**Average** **Balance Due** **Underpayment Ratio**	**Balance Due** **After Remittance** **($ millions)**
1990	56,561	0.1665	9,417
1991	53,046	0.1665	8,832
1992	50,411	0.1665	8,393

Table C4 presents the underpayment gap estimates for tax years 1985, 1988, and 1992.

TABLE C4 Underpayment Gap Estimates Tax Years 1985, 1988, and 1992	
Tax Year	**Amount** **($ millions)**
1985	7,046
1988	11,243
1992	8,393

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