Report

Federal Tax Compliance Research:

Tax Gap Estimates for Tax Years 2008–2010

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Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2008–2010

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Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2008–2010

Executive Summary

This report presents estimates of the tax gap for the Tax Year (TY) 2008—2010 timeframe. The tax gap and associated concepts are a particular way of defining and analyzing compliance and noncompliance and are based on tax year liability. The tax gap provides a rough gauge of the level of overall noncompliance and voluntary compliance given all the events that occurred during the relevant tax periods and the Internal Revenue Code (IRC) provisions in effect at the time. Tax gap estimates provide the Internal Revenue Service (IRS) with periodic appraisals about the nature and extent of noncompliance for use in formulating tax administration strategies. The word "tax" in the phrase "tax gap" is used broadly to encompass both tax and refundable and non-refundable tax credits. The IRS last issued tax gap estimates covering TY 2006.

Unlike prior tax gap estimates that pertain to a single tax year, these estimates reflect an estimated average compliance rate and associated average annual tax gap for the TY 2008—2010 timeframe. This approach was motivated by the decision to pool multiple years of compliance data from the annual individual income tax reporting compliance component of the National Research Program (NRP) to provide greater reliability of individual income tax underreporting tax gap estimates by sources of noncompliance.

The estimates were prepared by the IRS and are based on original research and analysis conducted or sponsored by the IRS. Estimating the tax gap is inherently challenging and requires assessing the merits of alternative methods, assumptions, and data sources. There is no single approach for estimating all the components of the tax gap. Each approach is subject to non-sampling error; the component estimates that are based on samples are further subject to sampling error. The uncertainty of the estimates is not readily captured by standard errors that typically accompany estimates based on sample data. For that reason, standard errors, confidence intervals, and statistical comparisons across years are not reported. This report provides summary information about the estimation methodology used to produce these estimates of the tax gap. More detailed information about the underlying approaches and assumptions can be found in forthcoming technical papers.

The gross tax gap is the amount of true tax liability that is not paid voluntarily and timely. The estimated gross tax gap is $458 billion. The net tax gap is the gross tax gap less tax that will be subsequently collected, either paid voluntarily or as the result of IRS administrative and enforcement activities; it is the portion of the gross tax gap that will not be paid. It is estimated that $52 billion of the gross tax gap will eventually be collected resulting in a net tax gap of $406 billion. The voluntary compliance rate (VCR) is a ratio measure of relative compliance and is defined as the amount of tax paid voluntarily and timely divided by total true tax, expressed as a percentage. The VCR corresponds to the gross tax gap. The estimated VCR is 81.7 percent. The net compliance rate (NCR) is a ratio measure corresponding to the net tax gap. The NCR is defined as the sum of "tax paid voluntarily and timely" and "enforced and other late payments" divided by "total true tax", expressed as a percentage. The estimated NCR is 83.7 percent.

Many factors contribute to differences over time in both the gross tax gap and the VCR. These include factors such as the overall level of economic activity, changes in the composition of economic activity with shifts toward those with higher or lower compliance rates, changes in tax law and administration, updated data and improved methodologies, and changes in underlying compliance behavior on the part of taxpayers and preparers. Since the tax gap typically moves with the economy, the December 2007 through June 2009 recession and the weak recovery that followed contributed to the gross tax gap remaining substantially unchanged from the previously released TY 2006 estimate. Gross collections as reported in the IRS Data Book show that the average annual gross collections for the Fiscal Year (FY) 2008—2010 timeframe was very close to the gross collections for FY 2006. Gross collections were $2.52 trillion in FY 2006 and increased to $2.69 trillion in FY 2007 and $2.75 trillion in FY 2008. They declined to $2.35 trillion in FY 2009 and remained at that level in FY 2010. Thus the average gross collection for the FY 2008—2010 timeframe and for FY 2006 were both about $2.5 trillion.

The new estimates suggest that compliance is substantially unchanged since last estimated for TY 2006. Although the TY 2008–2010 gross and net tax gap estimates ($458 billion, $406 billion) are 1.8 percent and 5.5 percent higher, respectively, than the previously released TY 2006 estimates ($450 billion, $385 billion), those increases are driven by improvements in the accuracy and comprehensiveness of the estimates through updates in methods and the inclusion of new tax gap components. Had the improvements not been made, the TY 2008–2010 tax gap estimates would have been slightly lower than the previous TY 2006 estimates (but still suggesting that compliance is substantially unchanged).

The estimated VCR (81.7%) is lower than the previous TY 2006 estimate (83.1%). About half of the 1.4 percentage point difference is attributable to the updated methods. Given the challenges in estimating the tax gap and given the many factors that contribute to differences over time, the remaining 0.7 percentage point difference from the TY 2006 estimate does not support concluding that noncompliance has increased.

The gross tax gap is composed of three components: nonfiling, underreporting, and underpayment. The estimated gross tax gaps for these components are $32 billion, $387 billion, and $39 billion respectively. The gross tax gap estimates can also be grouped by type of tax. The estimated gross tax gap for individual income tax is $319 billion, for corporation income tax is $44 billion, for employment tax is $91 billion, and for estate and excise tax combined is $4 billion.

Because of improvements in methods and data, estimates of the net tax gap by type of tax are available for the first time. The estimated net tax gap for individual income tax is $291 billion, for corporation income tax is $35 billion, for employment tax is $79 billion, and for estate and excise tax combined is $1 billion.

Findings from earlier tax gap analyses that compliance is higher when amounts are subject to information reporting and even higher when also subject to withholding continue to hold. The extent of coverage by information reporting and/or withholding is called "visibility" because incomes that are reported to the IRS are more "visible" to both the IRS and taxpayers. Misreporting of income amounts subject to substantial information reporting and withholding is 1 percent; of income amounts subject to substantial information reporting but not withholding, it is 7 percent; and of income amounts subject to little or no information reporting, such as nonfarm proprietor income, it is 63 percent.

Section 1. Introduction

This report presents estimates of the tax gap for the Tax Year (TY) 2008—2010 timeframe. The tax gap and associated concepts are a particular way of defining and analyzing compliance and noncompliance and are based on tax year liability. The tax gap provides a rough gauge of the level of overall noncompliance and voluntary compliance given all the events that occurred during the relevant tax periods and the Internal Revenue Code (IRC) provisions in effect at the time. Tax gap estimates provide the Internal Revenue Service (IRS) with periodic appraisals about the nature and extent of noncompliance for use in formulating tax administration strategies. The IRS last issued tax gap estimates covering TY 2006.

The gross tax gap is the amount of true tax liability that is not paid voluntarily and timely. The net tax gap is the gross tax gap less tax that will be subsequently collected, either paid voluntarily or as the result of IRS administrative and enforcement activities; it is the portion of the gross tax gap that will not be paid. The word "tax" in the phrase "tax gap" is used broadly to encompass both tax and refundable and non-refundable tax credits. The IRC allows for various refundable and non-refundable tax credits, and the tax gap estimates account for noncompliance with these credits as well as the tax that these credits offset. Thus for some taxpayers the word tax, in the sense that it is used for tax gap estimation, is zero or negative.

The tax gap paradigm separates noncompliance into components by type of tax and source of noncompliance. The three primary sources of noncompliance that result in payment of less than the true tax are: (1) the nonfiling tax gap (the tax not paid on time by those who do not file required returns on time); (2) the underreporting tax gap (the net understatement of tax on timely filed returns); and (3) the underpayment tax gap (the amount of tax reported on timely filed returns that is not paid on time).

The unobservable nature of the tax gap makes its estimation difficult and the estimates subject to uncertainty. While the amount of tax paid by taxpayers can be observed, the counterfactual amount needed to estimate the tax gap—the amount of tax that should have been paid by taxpayers—is not. The asymmetry of information between taxpayers and the IRS, even with third-party information reporting and the authority to examine books and records to ascertain that the correct tax has been paid, leaves the IRS at a disadvantage in evaluating whether a taxpayer in fact has paid the correct tax.

The estimates in this report were prepared by the IRS and are based on original research and analysis conducted or sponsored by the IRS. Estimating the tax gap is inherently challenging and requires assessing the merits of alternative methodologies, assumptions, and data sources. This report provides summary information about the estimation methodology used to produce these estimates of the tax gap. More detailed information about the underlying approaches and assumptions can be found in forthcoming technical papers listed in Footnote 1.

Unlike prior tax gap estimates that pertain to a single tax year, the estimates presented in this report reflect an estimated average compliance rate and associated average annual tax gap for the TY 2008—2010 timeframe. This approach was motivated by the decision to pool multiple years of compliance data from the annual individual income tax reporting compliance component of the National Research Program (NRP) to provide greater reliability of individual income tax underreporting gap estimates by sources of noncompliance.

Each annual individual income tax return NRP sample is representative of that year's filing population and contains compliance information on many tax return line items, making NRP the richest source of data for compliance analysis. However, the NRP sample design is based on dividing equally among three tax years the number of sample returns needed to achieve a certain precision in the resulting estimates. In using the NRP data for the individual income tax underreporting tax gap estimates, the NRP data were pooled over three years, resulting in estimates that reflect an annual average covering a period of three tax years, rather than just one.

The next section of the report presents an overview of the tax gap concepts and estimates. It contains the updated schematic representation of the estimates, known as the tax gap "map" and an updated chart displaying the relationship between individual income tax reporting compliance and third-party information reporting and withholding. It also includes a summary of significant tax law and other changes since the TY 2006 estimates. The final section of the report includes a general summary of the estimation methods and greater detail on the estimates for each of the three primary sources of noncompliance—nonfiling, underreporting, and underpayment. Technical papers with more detail than contained in this report are forthcoming.[1]

Section 2: Tax Gap Estimates for Tax Years 2008–2010

Tax Gap Concepts: Dollar Measures

As explained in the Introduction section of this report, tax gap concepts are defined on a tax year basis. These dollar concepts are measures of the extent of noncompliance. The gross tax gap is defined as the dollar amount of true tax that is not paid on time. The gross tax gap measure is defined and estimated at an aggregate level that incorporates all types of tax and all sources of noncompliance. Gross tax gap measures are also defined and estimated by type of tax, the three primary sources of noncompliance, and other subcomponents.

Enforced and other late payments are defined as the amount of the gross tax gap that will eventually be paid. This report presents estimates of the payments at an aggregate level and also (for the first time) by type of tax.

The net tax gap is defined as the gross tax gap less enforced and other late payments. It is the amount of the gross tax gap that will not be paid. Given estimates of enforced and other late payments for each type of tax, this report (for the first time) presents net tax gap estimates by type of tax. The use of the word "net" in this context reflects the subtraction of enforced and other late payments from the gross tax gap.

The net misreported amount, or NMA, is a tax gap concept associated with the underreporting tax gap. The NMA is the dollar amount of misreporting on a particular tax return or schedule line item. The NMA is also defined for the total amount of tax underreported, which is the underreporting tax gap. Since amounts reported and misreported on tax return and schedule lines can be either positive or negative, the actual method of calculation depends on whether the line item is an income item or an offset item (such as a deduction, expense, or credit). For an income item, the NMA is defined as the sum of all amounts underreported minus the sum of all amounts overreported. In general, income items are underreported in the aggregate, so the NMA for income items generally is positive. For an offset item, the NMA is defined as the sum of all amounts overstated minus the sum of all amounts understated. In general, offset items are overstated in the aggregate, so the NMA for offsets is typically positive. For this concept, the word net refers to the offsetting of overstated and understated amounts and not the subtraction of enforced and other late payments.

[1] Internal Revenue Service, Research, Analysis & Statistics. *Estimation of the Underreporting Tax Gap for TY 2008-2010: Methodology*. Publication 5161, forthcoming.
Internal Revenue Service, Research, Analysis & Statistics. *Estimation of the Individual Income and Self-Employment Nonfiling Tax Gaps for TY 2008-2010: Methodology*. Publication 5161, forthcoming .
Internal Revenue Service, Research, Analysis & Statistics. *Estimation of the Underpayment Tax Gap for TY 2008-2010: Methodology*. Publication 5161, forthcoming.
Internal Revenue Service, Research, Analysis & Statistics. *Estimation of Enforced and Other Late Payments and the Net Tax Gap for TY 2008-2010: Methodology*. Publication 5161, forthcoming.

Tax Gap Concepts: Ratio Measures

Tax gap concepts include several ratio measures expressed as rates or percentages. The purpose of these measures is to provide a relative measure of compliance or noncompliance. These measures are ratios of dollar amounts for the entire population.[2]

The voluntary compliance rate (VCR) is defined as the amount of tax paid voluntarily and timely divided by total true tax, expressed as a percentage. The VCR is a complement to the gross tax gap.

The net compliance rate (NCR) is defined as the sum of all timely and enforced and late payments divided by total true tax, expressed as a percentage. The NCR is a complement to the net tax gap. It is also equal to 1 minus the ratio of the net tax gap to total true tax.

The net misreporting percentage (NMP) is an underreporting tax gap concept. The NMP for a given line item is the NMA divided by the sum of the absolute values of the amounts that should have been reported. For most return or schedule line items, amounts that should have been reported can be positive only. However, amounts can be either positive or negative for business-related net income and certain other lines. So for those line items where amounts can be negative, the denominator of the NMP is not the net of positive and negative amounts, but instead it is the total of all the amounts disregarding the sign in the calculation—that is, the sum of the absolute value. The NMP is a complement to the NMA.

The voluntary reporting rate, or VRR, is another underreporting tax gap concept. It is a measure of the overall extent of reporting compliance for a particular type of tax. It is defined as the amount of reported tax divided by the amount of tax that should have been reported. It reflects reporting compliance on timely filed returns.

Significant Tax Law and Other Changes Since Tax Year 2006

Tax law and the level of economic activity can affect the tax gap. As noted earlier in the report, the timeframe covered by the estimates includes the recession of 2007—2009. The recession was followed by a slower than usual recovery. Components of the stimulus designed to help move the economy out of the recession included the Recovery Rebate Credit (TY 2008), the Making Work Pay and Government Retiree Credits (TY 2009 and TY 2010), and the First Time Homebuyers Credit (TYs 2008—2010). According to IRS Statistics of Income (SOI) data[3], the aggregate value of the Recovery Rebate Credit was about $12 billion for TY 2008. The Making Work Pay Credit was $51 billion and $54 billion in TY 2009 and TY 2010 respectively. The First-Time Home Buyer Credits amounted to $8 billion, $10 billion, and $2 billion in TY 2008, TY 2009, and TY 2010 respectively. TY 2009 saw an expansion of the Earned Income Tax Credit (EITC), an expansion of the refundable portion of the Child Tax Credit (Additional Child Tax Credit), and the creation of an additional education credit—the American Opportunity Credit. The Residential Energy Credit was also expanded for TY 2009 and TY 2010 and increased from $1 billion in TY 2006 to $6 billion in both TY 2009 and TY 2010. The total of refundable and nonrefundable credits grew 64 percent from TY 2006 to the average for TY 2008—2010; credits grew 32 percent when the Recovery Rebate Credit and Making Work Pay and Government Retiree Credit are excluded.

There have been significant changes in the estate tax since TY 2006. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) began a phase-out of the estate tax through increases to the effective

[2]At a tax return level, these ratios may be undefined or have limited meaning because the numerator, denominator, or both may be zero.

[3] Statistics on reported credits are compiled from the Statistics of Income Individual Income Tax Returns Publication 1304 (Complete Report), Table A.

exemption amount and reductions in the maximum marginal tax rate until the estate tax was eliminated for one year in TY 2010. The estate tax exclusion increased from $1.5 million for TY 2004 estates to $3.5 million for TY 2009. The maximum marginal estate tax rate gradually decreased one percentage point per year from 48 percent in TY 2004 to 45 percent in TY 2007, and then remained flat through TY 2009. One of the provisions in the estate tax law had been an unlimited step-up in basis for income tax purposes for inherited assets from the decedent's basis to the fair market value of the asset at the time of death. Along with the elimination of the estate tax for TY 2010, EGTRRA limited the step-up in basis to $1.3 million in TY 2010.

The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (TRA 2010) reinstated the estate tax for TY 2010 with a $5 million effective exclusion and 35 percent maximum marginal tax rate, along with an unlimited step-up in basis. TRA 2010, however, gave estates the option of choosing the prior law under EGTRRA for TY 2010.

EGTRRA had a significant impact on estate tax reporting through the increase in the effective exclusion amount from $1.5 million in TY 2004 to $5.0 million in TY 2010 and the reduction in the maximum tax rate from 48 percent to 35 percent.

The number of corporation income tax returns filed continued to decline over the TY 2008–2010 timeframe. Annual corporation income tax return filings generally have declined since peaking at 2.9 million filed in 1988. The average annual decline was about 1.5 percent from TY 1999—2006 and 3.9 percent from TY 2006—2010. Reported tax declined each year for the TY 2007—2009 timeframe but increased for TY 2010.

Estimates for Tax Years 2008–2010

As described in the Introduction, unlike prior tax gap estimates, the estimates presented in this report reflect an estimated average compliance rate and associated average annual tax gap for the TY 2008—2010 timeframe. The motivation for combining multiple years of annual NRP data of individual income tax compliance is to increase the reliability of the resulting estimates. Starting with TY 2006, the NRP individual income tax sample design moved from larger periodic samples to smaller annual samples. Accompanying this change was an expectation that multiple years will be combined when analyzing the data for certain purposes. The sample design allocated evenly over three tax years the total number of returns that previously would have formed a single larger periodic sample.

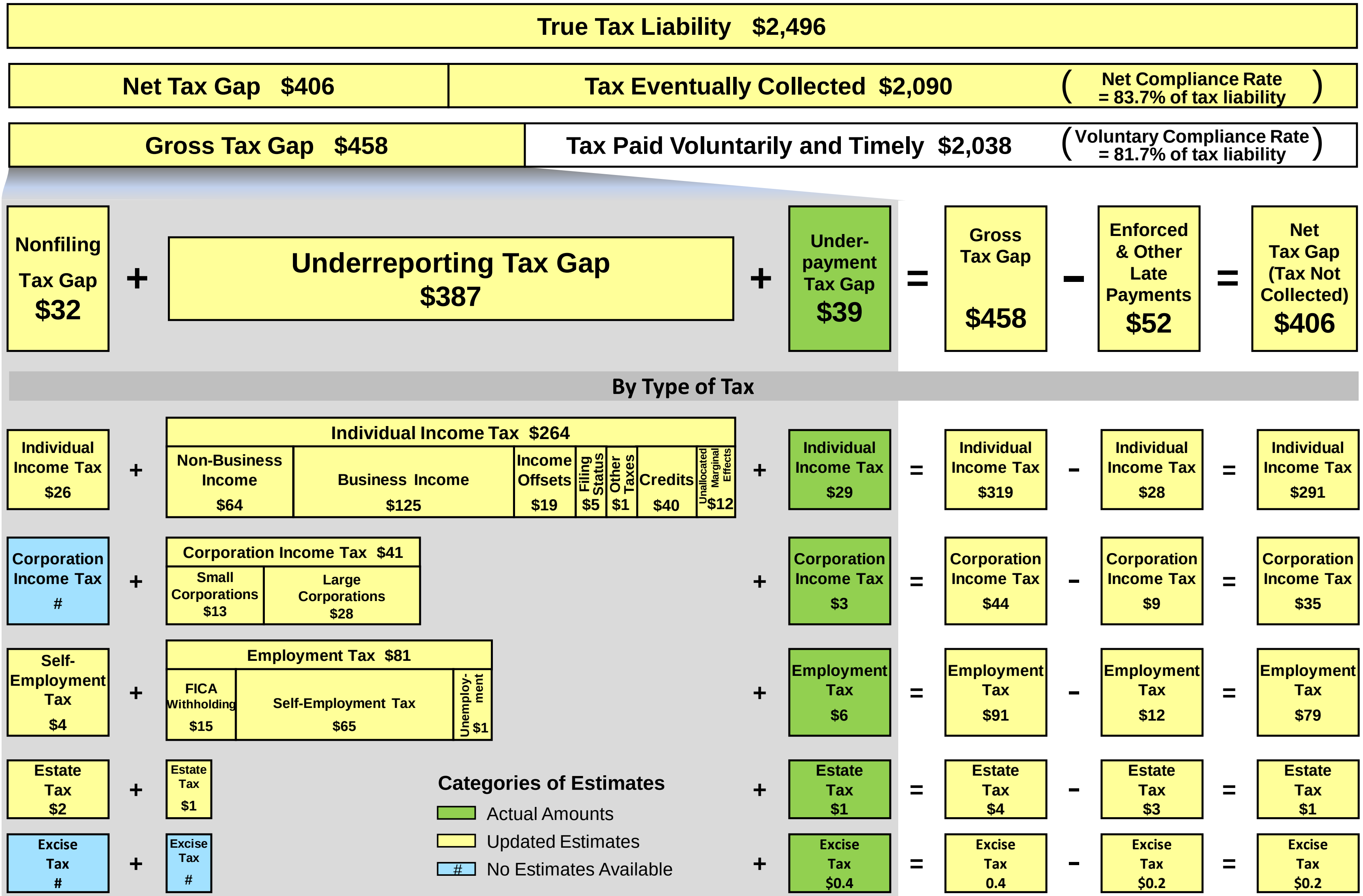
The tax gap map schematic on the following page shows the gross tax gap, enforced and other late payments, and net tax gap for all types of taxes and components combined and also by type of tax and component separately.

Overall Gross and Net Tax Gap

As shown in Table 1, the estimated gross tax gap is $458 billion. An estimated $52 billion of the gross tax gap eventually will be collected resulting in a net tax gap of $406 billion. The voluntary compliance rate (VCR) is 81.7 percent. The estimated net compliance rate (NCR) is 83.7 percent.

The new estimates suggest that compliance is substantially unchanged. Although the TY 2008—2010 gross and net tax gap estimates are higher than the previously released TY 2006 estimates, the increase is primarily due to improvements in the accuracy and comprehensiveness of the estimates through updates in methods and the inclusion of new tax gap components. Had the improvements not been made, the TY 2008—2010 tax gap estimates would have been slightly lower than the previous TY 2006 estimates. Table 1 shows the breakout of

Tax Gap Map
Tax Year 2008-2010 Annual Average ($ Billions)



Internal Revenue Service, April 2016

Detail may not add to total due to rounding . Not to scale.

the changes into the portion attributable to change in methods (including the new components) and the portion attributable to other factors.

The estimated VCR is lower than the previous TY 2006 estimate. About half of the 1.4 percentage point difference is attributable to the updated methods. Given the challenges in estimating the tax gap and given the many factors that contribute to differences over time, the remaining 0.7 percentage point difference from the TY 2006 estimate does not support concluding that noncompliance has increased.

Table 1. Tax Gap Estimates for Tax Years 2006 and 2008–2010[1] and Decomposition of Change

[Money amounts are in billions of dollars]

Tax Gap Component	TY2006	TY2008-2010 [1]	Total Change	Change Due To: Updated Methods[2]	Change Due To: Other Factors[3]
Estimated Total True Liability	**2,660**	**2,496**	**-164**	**14**	**-178**
Gross Tax Gap	**450**	**458**	**8**	**22**	**-14**
Nonfiling Tax Gap	28	32	4	4	[5]
Underreporting Tax Gap	376	387	11	24	-13
Underpayment Tax Gap	46	39	-7	-6	-1
Overall Voluntary Compliance Rate	**83.1%**	**81.7%**	**-1.4%**	**-0.8%**	**-0.7%**
Enforced and Other Late Payments	**65**	**52**	**-13**	**-12**	**-1**
Net Tax Gap [4]	**385**	**406**	**21**	**34**	**-13**
Overall Net Compliance Rate	**85.5%**	**83.7%**	**-1.8%**	**-1.2%**	**-0.6%**

[1] The estimates are the annual averages for the Tax Year 2008-2010 timeframe.

[2] Difference between the TY2006 and TY2008-2010 tax gap estimates accounted for by updated methods and new tax gap components.

[3] Difference between the TY2006 and TY2008-2010 tax gap estimates accounted for by changes in economic activity, changes in compliance behavior and statistical variability.

[4] The net tax gap is the gross tax gap reduced by the amount of enforced and other late payments that will eventually be collected.

[5] Less than $0.5 billion.

Detail may not add to total due to rounding.

Many factors contribute to differences over time in both the gross tax gap and the VCR. These include factors such the overall level of economic activity, changes in the composition of economic activity with shifts toward those with higher or lower compliance rates, changes in tax law and administration, updated data and improved methodologies, and changes in underlying compliance behavior on the part of taxpayers and preparers. Since the tax gap typically moves with the economy, the December 2007 through June 2009 recession and the weak recovery that followed contributed to the gross tax gap remaining substantially unchanged from the previously released TY 2006 estimate. Gross collections as reported in the IRS Data Book show that the average annual gross collections for the Fiscal Year (FY) 2008—2010 timeframe was very close to the gross collections for FY 2006. Gross collections were $2.52 trillion in FY 2006 and increased to $2.69 trillion in FY 2007 and $2.75 trillion in FY 2008. They declined to $2.35 trillion in FY 2009 and remained at that level in FY 2010. Thus the average gross collection for the FY 2008—2010 timeframe and for FY 2006 were both about $2.5 trillion.

The estimate of enforced and late payments is $13 billion lower than the TY 2006 enforced and late payments estimate of $65 billion. Nearly all of this difference is attributable to new data on non-enforced late payments, which showed that assumptions made about these payments for prior estimates were too optimistic. The estimated net tax gap is $21 billion higher than the $385 billion net tax gap estimated previously for 2006. The estimated net compliance rate (NCR) is 83.7 percent, which is 1.8 percentage points lower than the 85.5 percent NCR for TY 2006.

There is no single approach for estimating all the components of the tax gap. Each approach is subject to non-sampling error; the component estimates that are based on samples are further subject to sampling error. The uncertainty of the estimates is therefore not readily captured by standard errors that typically accompany estimates based on sample data. For that reason, standard errors, confidence intervals, and statistical comparisons across years are not reported.

Nonfiling Tax Gap

Sufficiently reliable information exists for developing estimates of the nonfiling tax gap for three types of tax: individual income tax, self-employment tax, and estate tax. The nonfiling tax gap is the tax gap associated with tax returns that were filed after the filing deadline or valid extension date—or were not filed at all.

Table 2 provides a breakout of the nonfiling, underreporting, and underpayment tax gaps into major subcomponents and reports their shares of the gross tax gap. As shown in Table 2 the nonfiling tax gap accounts for about 7 percent of the gross tax gap. The individual income tax nonfiling tax gap is estimated to be $26 billion, or about 81 percent of the total estimated nonfiling tax gap. The self-employment tax nonfiling tax gap is estimated to be $4 billion, or about 13 percent of the total estimated nonfiling tax gap. The estate tax nonfiling tax gap is estimated to be $2 billion.

Underreporting Tax Gap

Of the $458 billion gross tax gap, $387 billion (approximately 85 percent) is estimated to result from the underreporting of true tax on timely filed returns. The individual income tax underreporting tax gap estimate is $264 billion, or 68 percent of the overall gross underreporting tax gap. The corporation income tax underreporting tax gap estimate is $41 billion, or about 11 percent of the overall underreporting tax gap. The employment tax underreporting tax gap estimate is $81 billion and the estate tax estimate is $1 billion, representing 21 percent and less than one half of one percent of the overall underreporting tax gap, respectively.

Underpayment Tax Gap

About 9 percent of the gross tax gap results from taxpayers not timely paying in full the tax they report on timely filed returns. The estimated underpayment tax gap is $39 billion. About 74 percent of the underpayment tax gap, about $29 billion, is from underpayment of individual income tax. Underpayment of employment taxes (Federal Insurance Contributions Act, FICA and Federal Unemployment Tax Act, FUTA) and the railroad retirement tax accounts for 15 percent of the underpayment tax gap. Underpayment of corporation income taxes accounts for 8 percent of the underpayment tax gap. These shares correspond to $6 billion and $3 billion respectively. Excise tax and estate tax account for the remaining $1 billion.

Enforced and Other Late Payments

Some of the gross tax gap is collected through IRS enforcement and administrative efforts and some is paid late without any IRS action taken. The total amount of enforced and other late payments is $52 billion. About 54 percent of the total, or $28 billion, is associated with individual income tax. About 17 percent of the total is the $9 billion in corporation income tax enforced and other late payments. Employment tax enforced and other late payments are 23 percent of the total or $12 billion. Estate tax enforced and other late payments are $3 billion or about 6 percent of the total. Excise taxes enforced and other late payments account for less than one half of one percent of all enforced and late payments.

Table 2. Tax Gap Estimates for Tax Years 2008–2010[1]

[Money amounts are in billions of dollars]

Tax Gap Component	TY 2008-2010[1]	Share of Gross Tax Gap
Estimated Total True Liability	**2,496**	
Gross Tax Gap	**458**	**100%**
Overall Voluntary Compliance Rate	**81.7%**	
Net Tax Gap	**406**	
Overall Net Compliance Rate	**83.7%**	
Nonfiling Tax Gap	**32**	**7%**
Individual Income Tax	26	6%
Self-Employment Tax	4	1%
Estate Tax	2	[2]
Underreporting Tax Gap	**387**	**85%**
Individual Income Tax	**264**	**58%**
Non-Business Income	64	14%
Business Income	125	27%
Adjustments, Deductions, Exemptions	19	4%
Filing Status	5	1%
Other Taxes	1	[2]
Unallocated Marginal Effects	12	3%
Credits	40	9%
Corporation Income Tax	**41**	**9%**
Small Corporations (assets under $10M)	13	3%
Large Corporations (assets of $10M or more)	28	6%
Employment Tax	**81**	**18%**
Self-Employment Tax	65	14%
FICA and Unemployment Tax	16	3%
Estate Tax	1	[2]
Underpayment Tax Gap	**39**	**9%**
Individual Income Tax	29	6%
Corporation Income Tax	3	1%
Employment Tax	6	1%
Estate Tax	1	[2]
Excise Tax	[3]	[2]

Detail may not add to total due to rounding.

[1] The estimates are the annual averages for the Tax Year 2008-2010 timeframe.

[2] Less than 0.5 percent.

[3] Less than $0.5 billion.

Net Tax Gap by Type of Tax

As noted earlier, new data on enforced and other late payments by type of tax enables the estimation of net tax gaps by type of tax. As shown on the Tax Gap Map, the net tax gap for individual income tax is $291 billion and for corporation income tax is $35 billion. The net tax gap for employment taxes is $79 billion. The estate tax net tax gap is $1 billion. The excise tax net tax gap is $0.2 billion.

Voluntary Compliance Rates by Type of Tax

Table 3 shows the VCRs by type of tax along with their distributions of tax liability. The VCR for most of the major types of tax remained largely unchanged from TY 2006. There was a decrease in the VCR for individual income tax from 77 percent for TY 2006 to 74 percent. This decline along with the individual income tax's increase in the share of liability contributes to the slight decline in the overall VCR.

Table 3. Voluntary Compliance Rates by Type of Tax, Tax Years 2006, and 2008–2010[1]

Tax Gap Component	Voluntary Compliance Rates		Distribution of Liability	
	TY2006	TY2008 - TY2010	TY2006	TY2008 - TY2010
Overall (all taxes combined)	*83%*	*82%*	*100%*	*100%*
Individual Income Tax	77%	74%	48%	50%
Corporation Income Tax	82%	83%	15%	10%
Employment Tax	91%	90%	33%	37%
Estate Tax	74%	74%	1%	1%
Excise Tax	N/A	N/A	2%	2%

Note: The Voluntary Compliance Rates reflect all three types of noncompliance: Nonfiling, underreporting, and underpayment.

Visibility: A Link Between Reporting Compliance and Third-Party Information Reporting

The estimates confirm the relationship between reporting compliance and third-party information reporting that was demonstrated in earlier tax gap estimates. For the individual income tax, reporting compliance is far higher when income items are subject to information reporting and even higher when also subject to withholding. As shown in Chart 1 on page 12, from the individual income tax underreporting tax gap estimates, the net misreporting percentage (NMP) for income amounts subject to substantial information reporting and withholding is 1 percent, for income amounts subject to substantial information reporting but not withholding is 7 percent; and for income amounts subject to little or no information reporting, such as nonfarm proprietor income, is 63 percent. The grouping of items into categories was changed slightly from prior analyses. The current categories include income items only. The prior analyses and categories included income offsets (adjustment, deductions, and exemptions).

Section 3: Data and Methodology

There is no single method for estimating all the components of the tax gap. Rather, the approach for each component varies according to the type of information available. Since the last tax gap estimates were released for TY 2006, new data have become available and these have been used in developing the current estimates. Although the general approaches are the same as for prior estimates, there have been some methodological enhancements. These changes are highlighted in the following methodological overviews for each tax gap component.

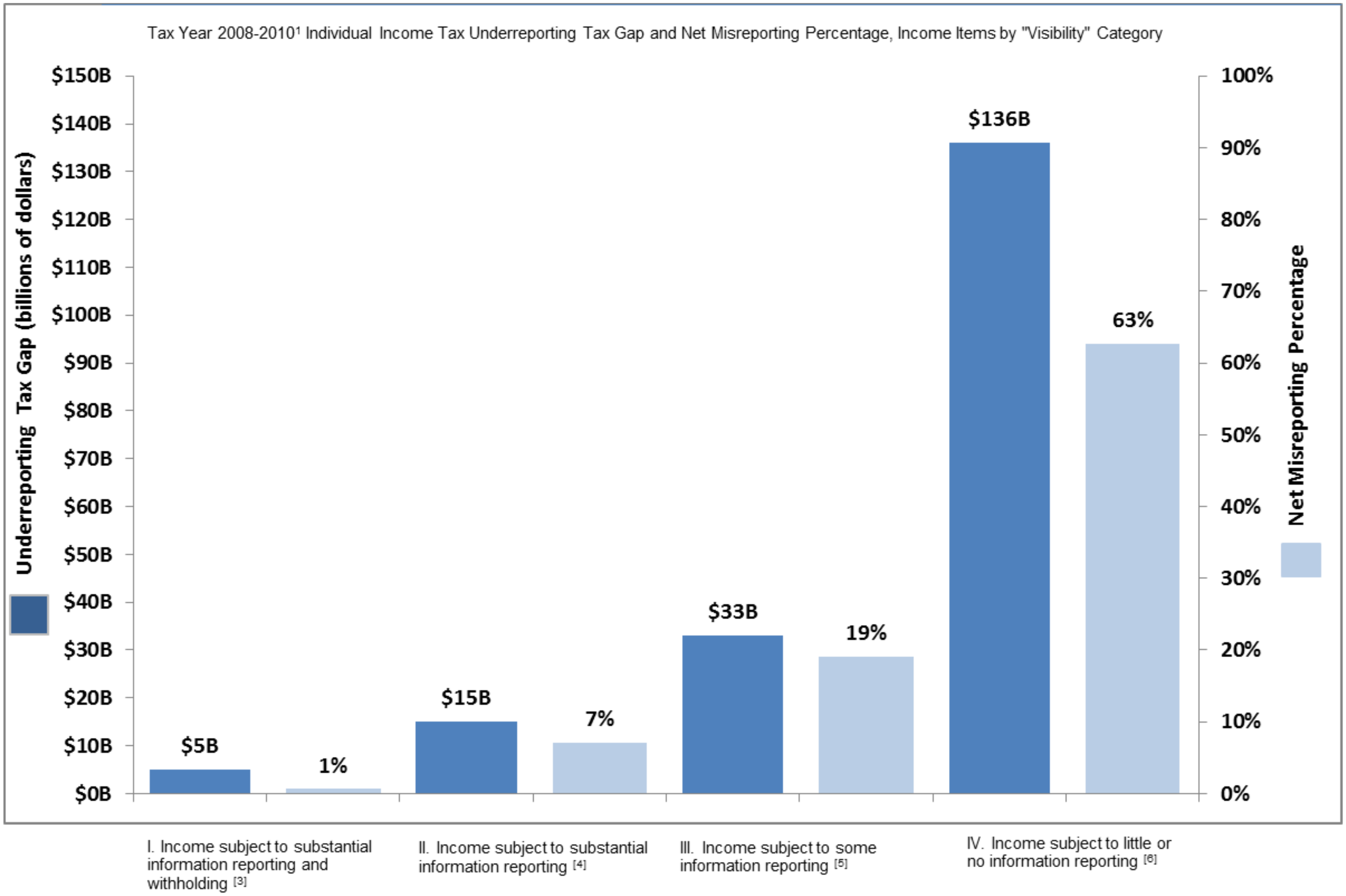
Nonfiling Tax Gap

Estimates of the nonfiling tax gaps were developed for individual income tax, self-employment tax, and estate tax. The methods used for each are described next. The IRS has been conducting research into estimating a corporation nonfiling tax gap, but has not yet found a sufficiently reliable method and data upon which to base an estimate.

Individual Income Tax Nonfiling Tax Gap

Taxpayers are required to prepay a significant share of their estimated liability for a given year through withholdings or estimated tax payments. Some taxpayers do not timely file required returns to self-assess their tax liability and to reconcile that with prepayments and credits. These prepayments and credits may exceed their true tax liability or cover it in full or in part. Only true tax in excess of timely payments and any credits for which they are estimated to be eligible is included in the nonfiling tax gap. Although those whose prepayments

Chart 1. Effect of Information Reporting on Individual Income Tax Reporting Compliance, Tax Years 2008–2010



[1] The TY 2008 -- 2010 estimate is the annual average for the Tax Year 2008, 2009, and 2010 timeframe.
[2] The Net Misreporting Percentage is the net misreported amount as a ratio of the sum of the absolute values of the amounts that should have been reported expressed as a percentage. For the items included in this chart, the net misreported amount is understatements of income less overstatements of income. On net, income is understated.
[3] Includes wages & salaries.
[4] Includes pensions & annuities, unemployment compensation, dividend income, interest income, taxable Social Security benefits.
[5] Includes partnership/S corp. income, capital gains, alimony income. Prior definition also included deductions and exemptions.
[6] Includes nonfarm proprietor income, other income, rents and royalties, farm income, Form 4797 income. Prior definition also included adjustments to income .

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and credits fully satisfied their true tax liability are not in compliance with the filing requirements of the IRC, this noncompliance does not increase the tax gap since their tax was paid on time.

The individual income tax nonfiling tax gap was estimated using two methods, with the average of the two yielding the estimate of $26 billion. Each method accounts for late filers and "not-filers" (those who did not file by the time of the estimate). These two approaches incorporate improvements to the methods used to estimate the TY 2001 and the TY 2006 individual income tax nonfiling tax gaps.

Census Method

For the Tax Year 2001 tax gap estimates, the IRS estimated the individual nonfiling tax gap based on a match of Census and IRS data conducted by the Census Bureau. This approach involved identifying respondents in the Census survey who appeared not to have filed an income tax return. However, this approach lacked complete information on incomes not reported in the Census, as well as payments. The current method improves on the old Census-based method in several important ways: (a) it uses the anonymous Protected Identification Key (PIK) created by Census to create a better matched dataset, allowing us to identify "not-filers" more accurately;[4] (b) it uses the third-party information, together with demographic information about nonfilers contained in Census data, to make better imputations of certain income, deduction, and credit amounts;[5] and (c) it supplements this estimate of the tax gap derived from the Census-IRS matched data with a separate estimate for taxpayers who filed late, but before the date of the IRS data extract provided to Census. The reason for this supplemental estimate based on IRS administrative data is that the matched Census-IRS data include returns that were not timely filed, but were filed by December 31 of the ordinary filing year. There is no indicator to distinguish them from the returns filed on time; hence they appear in the matched dataset and are not included in the nonfiling estimate developed using the matched data. Since we can identify tax returns in the matched dataset that were filed after December 31 (and were therefore clearly late), estimating their contribution to the tax gap is much more straightforward. The method also accounts for income and payments that are not reported on late filed returns, but are reported to the IRS on third-party information documents.[6] The estimate based on the Census Method (accounting for all late filers) is $27 billion.

Administrative Data Method

To estimate the TY 2006 individual income tax nonfiling tax gap, the IRS assembled a sample of individuals not appearing on either timely filed tax returns or returns filed late through the date of the analysis, identified the income reported to the IRS for them by third parties, grouped them into family (tax) units guided by Census data, then estimated their tax liability less withholding and estimated credits. However, this approach lacked information on income not reported to the IRS by third parties and basing the estimate on a sample of individuals created challenges for grouping people together into presumed tax units.[7]

The main improvements to the TY 2006 methodology were to apply the approach to population data rather than to a sample and to impute self-employment income to the tax units. The methods developed for imputing self-

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[4] See Maggie R. Jones and Amy O'Hara, "Do Doubled-Up Families Minimize Household-Level Tax Burden?" *2014 IRS Research Bulletin*, Publication 1500, and Wagner, D., & Layne, M. (2012). *Person Identification Validation System (PVS): Applying the Center for Administrative Records Research and Applications' Record Linkage Software*, Washington, DC: Center for Administrative Records Research and Applications Internal Document, U.S. Census Bureau.

[5] The methods developed for imputing income, deduction, and credit amounts to the matched dataset are described in greater detail in the technical report.

[6] We do not impute other kinds of income to them (such as from self-employment). However, late filers already report a significant amount of these kinds of income.

[7] See Internal Revenue Service, "Federal Tax Compliance Research: Tax Year 2006 Tax Gap Estimation" at http://www.irs.gov/pub/irs-soi/06rastg12workppr.pdf.

employment income, deductions, and credits to the administrative dataset, and methods for grouping individuals into tax units, are described in greater detail in the technical report.

The tax gap associated with late filers takes into account the filing status, dependents, deductions, and credits reported on their late returns. This was the same approach as that used to supplement the Census Method, but included all late filers, not just those who had filed by December 31. The estimate of the individual income tax nonfiling tax gap based on the Administrative Data Method (accounting for all late filers) is $25 billion.

Estimate for Tax Years 2008–2010

The individual income tax nonfiling tax gap estimates under both methods are reported in Table 4. Averaging the estimates from the two methods yields an estimate of $26 billion.

Table 4. Tax Year 2008–2010 Individual Income Tax Nonfiling Tax Gap Estimates[1]

[Money amounts are in billions of dollars]

Estimation Method	TY 2008-2010[1]
Final Nonfiling Gap Estimate	**26**
Census Method	27
Administrative Data Method	25

[1] The estimates are the annual averages for the Tax Year 2008-2010 timeframe.

Self-Employment Tax Nonfiling Tax Gap

The nonfiling tax gap associated with self-employment tax was a byproduct of estimating the underreporting tax gap associated with individual income tax. The self-employment tax due for each required return was straightforward to compute, given the self-employment income associated with the “not-filers” and late filers. Timely payments were allocated to income tax and self-employment tax in proportion to the two tax liabilities. The resulting estimate of the self-employment tax nonfiling tax gap (averaged across the Census and Administrative Data methods) is $4 billion. This component estimate is new this year.

Estate Tax Nonfiling Tax Gap

The estate tax nonfiling tax gap also accounts for late filers and those who never file a required return. The nonfiling tax gap associated with late filed returns (late-filer tax gap) is estimated from the tax reported on actual late filed returns and is $0.5 billion.

The estimate of the nonfiling tax gap for estate tax returns that will never be filed is a projection from the methodology used to estimate the prior TY 2006 estate tax nonfiling tax gap. The difference between the estimated number of returns with a filing obligation (based on wealth-adjusted mortality curves developed using data from the 2000 University of Michigan Health and Retirement Study and pre-2000 data from the National Center for Health Statistics and projected calendar year 2001 deaths) and the estimated number of estate tax returns filed (based on IRS Statistics of Income data) was the estimated number of estate tax nonfilers. Their tax liability was estimated by assuming that their noncompliance was the average tax liability reported on timely filed estate tax returns having similar characteristics.

The *Calendar* Year 2001 estimate was then converted to a *Tax* Year 2001 estimate and projected to TY 2008-2010 by assuming a constant filing noncompliance rate. The resulting estimate is $1 billion. The total estate tax nonfiling tax gap estimate is $2 billion.

Underreporting Tax Gap

Individual Income Tax and Self-Employment Tax Underreporting Tax Gaps

Overview

The basic approach for estimating the individual income tax and self-employment tax underreporting tax gaps is the same as that used for the TY 2006 estimate. NRP data from a statistically representative sample of individual income tax filers are the foundation of the estimates. The methodology includes adjustments to account for income that is not detected during the audits, an inherent limitation in situations where taxpayers are intentionally noncompliant or deal in cash with poor or non-existent record keeping. This methodological step is unique to estimating these components of the tax gap and sets these estimates apart from other analyses and estimates developed from NRP data that do not make such an adjustment. The adjustment results in estimates of noncompliance that are higher than those based on unadjusted NRP data.

Methodology for Tax Years 2008–2010

The IRS National Research Program designs and administers individual income tax reporting compliance studies. Beginning with TY 2006, the program moved from a larger periodic sample to smaller annual samples. The annual samples consist of approximately 13,000 returns—roughly one-third the size of prior periodic studies. The annual studies can be combined over several years to provide compliance estimates at a level of reliability similar to a much larger single-year study. The NRP uses a process called classification to determine the type of audit for each return selected and the mandatory issues to be examined.[8] In the case of simple returns where information can be easily reconciled with the information returns filed by third parties and there are no other indications of significant compliance issues, taxpayers are not audited and not contacted. Returns that have only a small number of simple issues identified in classification are routed to correspondence exams. More complicated returns are assigned to one of two types of audits that involve face-to-face interaction with the taxpayer: either an office audit handled by a Tax Compliance Officer at an IRS office or a field audit handled by a Revenue Agent, who may visit the taxpayer's place of business.

Not all underreported income is detected by every audit, even ones of the scope and quality of audits conducted under the NRP. For tax gap estimates prior to TY 2001, a multiplier approach was used to adjust the audit data for undetected income. Beginning with the TY 2001 estimate, an econometric technique termed Detection-Controlled Estimation (DCE) has been used. The current adaptation of the DCE methodology allows for greater variability in the average detection rates across line items.[9] The modeling approach for the detection component generally requires data that includes 15 or more returns audited by the same examiner. This required the pooling of data and TY 2006—2008 data were pooled in order to provide a sufficient number of observations. An imputation methodology was developed to allocate the DCE estimates derived from the pooled TY 2006—2008 NRP data to more recent TY 2008—2010 NRP data.

In addition to the detection equation, the second extension of the DCE methodology included a two-part specification for modeling the noncompliance of a line item. The first noncompliance equation modeled the likelihood of noncompliance while the second equation modeled the magnitude of noncompliance conditional on the presence of noncompliance. Since some income items with significant information reporting were not routinely classified, the extension also included an additional modeling step conditional on whether or not the line item was classified and whether there were mismatches with information documents for these items. The

[8] Examples of issues include line items on the return, filing status, number of dependents, whether an activity is engaged in for profit or as a hobby.

[9] Detection rate here is defined as the amount of unreported income detected as a percentage of the total unreported income. The smaller the detection rate, the larger the amount of total underreporting is relative to detected underreporting.

data requirements for DCE[10] meant that some income items still needed to be grouped together for purposes of estimating the detection equation, even when using NRP data pooled across three years. Table 5 shows the specific groupings of income items used for estimation.

Table 5: Grouping of Income Items for Joint DCE Estimation of Undetected Income

Items Subject to Significant Information Reporting	Items Routinely Classified	
Estimated Jointly	***Estimated Jointly***	***Estimated Separately***
Wages and Salaries	Short-term Capital Gains	Schedule C
Interest	Long-term Capital Gains	Schedule F
Dividends	Rents and Royalties	
State and Local Tax Refunds	Partnership, S corp., Estate, Other	
Pension and IRA income	Form 4797 Net Gains	
Gross Social Security income	Other Income	
Unemployment compensation		

Imputation of Undetected Income

Although more recent NRP data are now available, DCE was estimated using data for TYs 2006—2008 due to the time and complexity of the estimation process. DCE undetected income was then imputed to more recent NRP data for TYs 2008—2010 under the assumption that the average propensity of examiners to detect underreported income remained stable over the two periods of time. The imputation consisted of two stages. The first stage generated ten simulated data sets with return-level predictions of undetected income for TYs 2006—2008. From those ten simulations, the probability of undetected income conditional on several factors and the average undetected income (when undetected income is present) were estimated. Those factors were used to impute undetected income to TY 2008—2010 NRP data in a second stage of ten simulations. The simulation approach is used to apply the DCE prediction formulas in a manner that results in a more realistic allocation of undetected income rather than having undetected income allocated to all returns or to a small number of returns.

Additional Tip Income Adjustments

For some line items, DCE is unlikely to account fully for all undetected income. Since tip income is relatively concentrated in a few industries and occupations, tip income represents a relatively small amount of overall wages, salaries, and tips. However, since a significant portion of tip income is paid in cash by customers, tip income is subject to less information reporting than most wages and salaries. The lack of complete information reporting and the cash nature of many tips suggest that tip income had a lower compliance rate than other wages and salaries and was harder to detect during an audit. Given the concentration of tip income and the nature of the NRP samples, DCE estimation did not support estimates of unreported tip income. Unreported tip income was assumed to have the same noncompliance rate as the detected noncompliance rate for sole proprietor net income or loss. Reported tip income was multiplied by an adjustment factor to estimate unreported tip income.

Tax Calculator

The imputation of return-level predictions of undetected income from the TY 2006—2008 simulations to the TY 2008—2010 NRP data provided estimates of total underreported income, but not underreported tax. To estimate underreported taxes resulting from the underreported income, a tax calculator was applied to individual observations (i.e. tax returns) from the ten simulated TY 2008—2010 data sets. This process provided ten underreporting tax gap estimates for each line item, which were then averaged to produce the final underreporting tax gap estimate. The final line-item underreporting tax gap estimates were summed to estimate

[10] For example, the need for at least 15 audits by the same auditor in which a given line item (or grouping of line items) was audited.

the overall individual income tax underreporting tax gap. Estimating the underreporting tax gap for each income item involved a process in which the additional income for each income item was added to the reported amount of income and then the additional tentative tax[11] based on that additional income calculated. Then that additional income was dropped and the process repeated for the next income item.

For filing status, the tax gap is the difference in tentative tax based on reported income, deductions, and filing status and tentative tax based on income and deductions that should have been reported calculated using the filing status that should have been reported. For credits, the tax gap is the difference between credits based on reported income, deductions, and filing status and credits based on income, deductions, and filing status that should have been reported. Although there are no specific DCE adjustments for credits, the DCE adjustment to income items flows through to the calculation of the gap associated with credits.

Filing Status

The net misreported amount of tax associated with misreporting of filing status is now explicitly calculated. The tax gap associated with filing status does not include the effect of filing status on credits. Those effects are included in the tax gap associated with credits. For the TY 2008—2010 timeframe, the average annual tax gap associated with misreported filing status is $5 billion.

Unallocated Marginal Effects

The marginal tax rate used to estimate the tax gap associated with a given income line item is calculated holding all other line items at their reported amounts. This calculation understates the true marginal tax rate whenever more than one line item has been underreported on the same return and the combined underreporting results in a higher marginal tax rate than when the tax on the underreported amounts is calculated separately. For TY 2001 and TY 2006, the total individual income tax underreporting tax gap estimates were the sum of the tax gap amounts associated with each line item. Therefore, the TY 2001 and TY 2006 estimates understated the total individual income tax underreporting tax gap. For TYs 2008—2010, the total individual income tax underreporting tax gap is calculated based on the marginal tax rates associated with all misreporting for a given return. The difference between total individual income tax underreporting tax gap and the sum of the individual line item tax gaps is characterized in this report as “unallocated marginal effects.” For the TY 2008—2010 timeframe, the average annual tax gap associated with unallocated marginal effects is $12 billion.

Change From Tax Year 2006 Method

The estimates incorporate new NRP data. NRP data through TY 2010 were available at the time the estimates were prepared. The DCE methodology was applied to NRP data for TYs 2006—2008 and the estimates of undetected income were then imputed to the NRP data for TYs 2008—2010. For the first time, the individual underreporting tax gap estimates reflect the annual average for a time frame (TY 2008—2010) instead of a single tax year. Pooling data across multiple tax years improves the reliability of estimates by sources of noncompliance (for example, by type of income or offset).

Another improvement in the estimation method was a change to the imputation categories used for imputing DCE estimates from TY 2006—2008 to TY 2008—2010 to better reflect the assumptions and structure of the DCE estimation methodology. The imputation categories for the TY 2006 tax gap estimates focused on deciles of the amounts reported and Adjusted Gross Income (AGI) reported. The new imputation categories link detection to information return (for example, Form W-2, Form 1099, etc.) document discrepancies, line item classification outcomes, line item reporting, and whether or not underreporting was detected in the audit.

[11] Tentative tax is the amount reported on TY 2010 Form 1040 line 44.

Table 6. Individual Income Tax Underreporting Tax Gap by Source of Income: Tax Years 2008–2010[1]

[Money amounts are in billions of dollars]

Tax Return Line Items	Tax Gap	Share of Gross Tax Gap	Share of Individual Income Tax Underreporting Tax Gap	Net Misreporting Percentage[2]
Gross Tax Gap	**458**	**100%**	**n.a.**	**n.a.**
Individual Income Tax Underreporting Tax Gap	**264**	**58%**	**100%**	**22%**
Items Subject to Substantial Information Reporting and Withholding	**5**	**1%**	**2%**	**1%**
Wages, salaries, tips	5	1%	2%	1%
Items Subject to Substantial Information Reporting	**15**	**3%**	**6%**	**7%**
Interest income	1	[3]	[3]	3%
Dividend income	1	[3]	[3]	7%
State income tax refunds	1	[3]	[3]	13%
Pensions & annuities	5	1%	2%	4%
Unemployment Compensation	1	[3]	[3]	6%
Taxable Social Security benefits	7	1%	2%	19%
Items Subject to Some Information Reporting	**33**	**7%**	**12%**	**19%**
Partnership, S-Corp, Estate & Trust, etc.	22	5%	8%	16%
Alimony income	[4]	[4]	[4]	[4]
Capital gains	11	2%	4%	27%
Short-term Capital Gains	*6*	*1%*	*2%*	*13%*
Long-term Capital Gains	*5*	*1%*	*2%*	*13%*
Items Subject to Little or No Information Reporting	**136**	**30%**	**51%**	**63%**
Form 4797 income	4	1%	1%	42%
Other income	29	6%	11%	49%
Nonfarm proprietor income	78	17%	29%	64%
Farm income	5	1%	2%	71%
Rents & royalties	20	4%	8%	62%
Other Taxes	**1**	**[3]**	**[3]**	**3%**
Unallocated Marginal Effects	**12**	**3%**	**4%**	**n.a.**
Income Offsets (Adjustments, Deductions, Exemptions)	**19**	**4%**	**7%**	**5%**
Total Credits	**40**	**9%**	**15%**	**26%**
Filing Status	**5**	**1%**	**2%**	**n.a.**

[1] The estimates are the annual averages for the Tax Year 2008-2010 timeframe.

[2] The net misreporting percentage is the net misreported amount divided by the sum of the absolute values of the amounts that should have been reported, expressed as a percentage.

[3] Less than 0.5 percent.

[4] Estimate is based on very small sample size. Estimated tax gap is less that $ 0.5 billion and NMP is 2%.

n.a : not applicable.

NOTE: Components might not sum to totals because of rounding.

Improvements were also made to the treatment of self-employment tax, taxable social security benefits, and filing status. The calculation of self-employment tax was updated to account for the primary and secondary taxpayers' shares of wages and self-employment income. The calculation of the tax gap associated with misreported taxable social security benefits was updated to account for the effects of misreported income on other line items on the taxable portion of social security benefits. And the net misreported amount of tax associated with misreporting of filing status is now explicitly calculated. The tax gap associated with filing status accounts for the effect of changes in both the marginal tax rate schedule and the standard deduction on tax, but does not include the effect of the change in filing status on credits. Those effects are included in the tax gap associated with credits.

Finally there is a separate estimate for the additional underreported tax attributable to the interaction of multiple reporting errors on the same return and the progressive marginal tax rate structure. The process for estimating the tax effect of each source of income misreporting calculates the tax effect of misreporting for that item only. The sum of these separate estimates will understate the tax effect of the total misreporting if the combined misreporting results in a higher marginal tax rate than when the misreported items are considered one at a time.

Self-Employment Tax Underreporting Tax Gap

Self-employment taxes are required to be reported by individuals with self-employment income on individual income tax returns. The underreporting of self-employment income, primarily income reported on Schedules C and F, results in underreported self-employment taxes. Each spouse on a joint return has a separate earned income threshold above which the combined wages and self-employment income are subject to Medicare taxes, but not social security taxes. Undetected self-employment income (Schedules C and F) was allocated to the primary taxpayer and secondary taxpayer according to each taxpayer's respective share of self-employment income as determined by the NRP examiner. Undetected wages, salaries, and tips were allocated similarly. The tax calculator then calculated the amount of self-employment taxes that should have been reported.

Estimates for Tax Years 2008–2010

The estimates in Table 6 provide a breakout of the components of the individual income tax underreporting tax gap. The income components are grouped by "visibility" category. For each component, the table shows the component's share of the individual income tax underreporting tax gap. The table also shows each component's share of the gross tax gap. Business income reported on Schedules C, E, and F accounts for 47 percent of the total individual income tax underreporting tax gap for TYs 2008—2010. This consists of nonfarm proprietor income which accounts for 29 percent, flow-through income (partnerships, S corporations, and estates and trusts) which accounts for 8 percent, rent and royalty income which accounts for 8 percent, and farm income which accounts for 2 percent. Credits account for the second largest share (15 percent) of the individual income tax underreporting tax gap. EITC accounts for 10 percent of the individual income tax underreporting tax gap, followed by the refundable and nonrefundable child tax credit (3 percent), and the refundable and nonrefundable education credits (2 percent).

Corporation Income Tax Underreporting Tax Gap

The corporation income tax underreporting tax gap estimates are developed separately for small corporations (those without a balance sheet or with assets less than $10 million) and all other corporations. The estimates are based on data from operational audits instead of a statistically representative sample of NRP selected audits. The limited scope and selection criteria for non-NRP audits introduce statistical bias, meaning that the corporation audit issues and results are not necessarily representative of the overall corporation population. Proposed adjustments on these examined returns are used as the basis for estimating the noncompliance for the entire population of corporation income tax filers. The IRS has developed methods to project the results of these audits to the population. However there is considerable uncertainty surrounding the estimates of this component of the tax gap because of data limitations, lack of information from which to develop a reasonable method to adjust for undetected noncompliance, and other issues. Because of this uncertainty, unlike the individual income tax underreporting tax gap component, the corporation income tax underreporting tax gap component estimate does not reflect any adjustments for income undetected on the examinations upon which the estimates are based. Using non-NRP data potentially biases the estimates upwards while not adjusting for undetected income biases the estimates downwards. Despite these limitations, the corporate estimates provide a rough gauge of corporation income tax noncompliance.

Small Corporation Income Tax Underreporting Tax Gap[12]

Since operational audits are selected for examination based on their expected compliance risk, the examination results are not broadly applicable to the general population without additional assumptions and modeling. The estimates included here were based on an econometric approach that controls for the bias from using non-representative operational audit data. The econometric model is estimated using the operational audit data and tax return data for TY 2008–2010 to develop underreporting tax gap estimates. The basic approach is to jointly estimate an econometric model consisting of five equations:

(1) the probability of a return being audited;
(2) the probability of detecting underreported tax conditional on an audit;
(3) the amount of underreported tax conditional on detected underreporting;
(4) the probability of detecting overreported tax conditional on an audit and no detected underreporting; and
(5) the amount of overreported tax conditional on an audit and no detected underreporting.

Given that less than one percent of small corporations are audited for any given year and the variation in examination results from year to year, a period estimate is expected to provide more consistent and accurate results than estimating each year separately. Furthermore, TYs 2009–2010 reflect relatively similar economic circumstances with TY 2008—the beginning of the economic recession. Given those reasons, data from TYs 2008–2010 are used to jointly estimate the model for the final estimates. Estimates based on alternative combinations of tax years are provided in a forthcoming technical report. The estimated small corporation income tax underreporting tax gap is $13 billion.

Large Corporation Income Tax Underreporting Tax Gap[13]

Similar to the small corporation income tax underreporting tax gap, the estimates for large corporations rely on operational audit data. The final estimate is based on the same pareto/extreme value method that was used for the TY 2006 large corporation income tax gap estimate.

Pareto/Extreme Value Methodology for Mid-Size and Large Corporations

The methodology adopted for the large corporation income tax underreporting tax gap used the general observation from operational audit results that the majority of audit adjustments is concentrated in a relatively small number of audits (Bloomquist 2008). Axtell (2001) found that the distribution of U.S. firm sizes follows a Pareto distribution. Both Krishnaji (1970) and Revankar (1974) show that underreported income also follows a Pareto distribution if: (a) income follows a Pareto distribution and (b) underreporting is a constant fraction of true income. A study by Axtell (2001) provides support for the two conditions.

[12] Small corporations are defined as corporations reporting less than $10 million in assets, including those with no balance sheet.
[13] Mid-size corporations are defined as corporations reporting at least $10 million in assets, but less than $250 million. Large corporations are defined as corporations reporting at least $250 million in assets. The large corporation income tax underreporting tax gap estimate consists of the income tax underreporting tax gaps of both groups.

Through the use of the Pareto distribution applied to audit adjustment data, extreme values of noncompliance among large corporations can be used to estimate the noncompliance of the rest of the population. Operational audit data for large corporations for TYs 1999—2005 were used to identify the audits with extreme values in terms of the proposed audit adjustments to tax. The first step was to rank the audit results in descending order and identify the operational audits for corporations with assets over $250 million that account for all the net proposed audit adjustments. The proposed audit adjustments for all the other examined returns, which include both positive and negative amounts, offset each other. The parameters of a linear relationship between the log (base 10) of the audit recommendation and the log of the rank of the return (in descending order so that the largest recommendation received a rank of one) were then estimated. This linear relationship was then used to estimate the total tax gap and voluntary reporting rate (VRR)[14] for the large firms for TYs 1999—2005. The average VRR was then applied to the reported tax liability of all mid-size and large corporations (returns with reported assets over $10 million) arriving at an underreporting tax gap estimate of $28 billion.

Employment Tax Underreporting Tax Gap

The self-employment tax component of the employment tax underreporting tax gap estimate is based on underreported income data from the TY 2008–2010 NRP individual income tax reporting compliance studies, adjusted for undetected noncompliance. The tax effect was estimated by the tax calculator as described earlier in the report in the Tax Calculator section. Due to the absence of NRP data for other components of employment tax, the estimates for both FICA and FUTA are projections based on applying the estimated compliance rates from the 1993 employment tax gap report to current reported taxes.

Estate Tax Underreporting Tax Gap

The estate tax underreporting tax gap estimate is a projection from the methodology used to estimate the prior TY 2006 estate tax underreporting tax gap. The TY 2006 estimate reflected the application of a prior methodology to new data adjusted for changes to the estate tax law[15]. Operational audit data were combined with a random sample of tax returns filed timely in Calendar Year 2004 in order to predict underreported tax on unaudited returns using an econometric model. The Processing Year 2004 estimate was converted to a TY 2004 estimate, based on a 2004 death year, by applying two adjustment factors: one for estates with a reported total gross estate valued less than $5 million, and one for estates with a reported total gross estate valued greater than $5 million. The estate tax underreporting tax gap estimate is estimated to be $1.0 billion and was projected based on the assumption of a constant compliance rate.

Underpayment Tax Gap

The gross underpayment tax gap is the amount of liability that is reported on timely filed returns, but is not paid on time. Underpayment tax gap estimates by type of tax are developed through a tabulation of IRS administrative data for a tax year that sums the amount of liability timely reported, but not timely paid. These tabulations are developed for individual income tax returns, corporation income tax returns, employment tax returns, excise tax returns, and estate and gift tax returns.

[14] The VRR is defined as the aggregate amount of tax reported on the returns, expressed as a percentage of the estimated total amount of tax that should have been reported (in this case, as determined by the auditors and projected to the rest of the population). The VRR differs from the VCR in that the VRR is an estimate of only the underreporting tax gap component. The VCR includes the nonfiling and underpayment tax gaps in the calculation.

[15] Erard, Brian. 1999. "Estate Tax Underreporting Gap Study: A Report Prepared for the Internal Revenue Service Economic Analysis and Modeling Group." Order number TIRNO-98-P-00406. Internal Revenue Service.

Employers withhold and deposit individual income tax withheld from the pay of employees. The tax withheld and deposited is reported and reconciled on the employer's employment tax returns. For purposes of tax gap estimation an employer's failure to deposit or otherwise make timely payments of withheld income tax is included in the individual income tax gap and not the employment tax gap since the ultimate liability in this case is the employees' individual income tax liability.

The estimation methodology therefore includes two adjustments to the tabulations of administrative data. The first transfers tabulated amounts from employment tax to individual income tax. The amount of individual income tax withholding that an employer reports on time but did not deposit on time is tabulated as part of the analysis of the employment tax returns, but is included instead with the individual income tax underpayment tax gap.

The second accounts for situations in which an employer withholds income tax from employees, but does not report it on time (or pay it on time); that amount will not be included in the tabulations since they are based solely on timely filed employment tax returns. The reason why these amounts should be included in the underpayment tax gap is that they are ultimately payments of individual income tax, and we assume that the individual employee reported the tax liability and withholding on time, even though the employer did not report and did not pay it on time on the taxpayer's behalf.

This second adjustment is estimated as the amount associated with late employment tax returns filed by the date of the tabulation. If the amount associated with late returns filed after the tabulations were small, then these special tabulations presumably capture almost all the amount that could eventually be observed in tax records. Nonetheless, an unknown amount is presumably withheld from employees and never paid to the government by their employers; that is not estimated, even though it is by definition part of the individual income tax underpayment tax gap.

Finally, the self-employment tax underpayment tax gap is included with individual income tax underpayment gap in the underpayment tax gap tabulations since they are both reported on Form 1040. The self-employment tax portion was estimated from the total by assuming that the income and self-employment underpayment tax gaps are proportional to total individual income tax and self-employment tax liabilities.

Enforced and Other Late Payments

Some of the gross tax gap is collected through IRS enforcement efforts and some is paid late, i.e., after the payment due date without IRS intervention; for example, remitted when filing a return just before an extended filing deadline[16] or when filing an amended return. The general approach to estimating enforced and other late payments for a particular tax year is to track actual payments over time and then project these so that they include future payments that will eventually be made for that tax year. The details of the projection methods are described in detail in the forthcoming technical report.

Since the TY 2006 estimates were developed, new programs that tabulate enforced and late payments from IRS administrative data have been implemented. These tabulations distinguish payments made after the due date from those paid on time. The new tabulations show that previous assumptions about non-enforced late payments were somewhat too optimistic resulting in an estimate that was on the order of 25 percent higher than the current estimate. These new tabulations are used for all except the corporation income tax.

[16] The payment due date is generally the original due date of the return; extending the filing deadline does not extend the payment deadline.

The corporation income tax estimates of enforced and other late payments are taken entirely from the tabulations of Total Enforcement Revenue Collected (TERC) from the Enforcement Revenue Information System. This is primarily because corporations often make timely estimated tax payments or realize other credits that are eventually applied to enforcement assessments related to a tax year that begins after the payment was made or the credit was realized. These payments cannot be identified in the standard tabulations of late payments used for the other types of tax because they are actually paid before the original due date; so they are enforced payments paid "on time." Using TERC assumes that corporations do not make any non-enforced late payments, which would not be captured by TERC.

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