Research, Applied Analytics & Statistics

Federal Tax Compliance Research:

Tax Gap Estimates for Tax Years

2014–2016

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Federal Tax Compliance Research:
Tax Gap Estimates for Tax Years 2014-2016

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Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2014-2016

1 Executive Summary

This report presents estimates of the tax gap for the Tax Year (TY) 2014-2016 timeframe and tax gap projections for TY 2017-2019. It also provides revised estimates for TY 2011-2013 that incorporate data that were not yet available when the estimates were initially released. The tax gap is a measure of the level of overall noncompliance in the context of Internal Revenue Code (IRC) provisions in effect at the time. The estimates provide the Internal Revenue Service (IRS) with periodic appraisals of 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 nonrefundable tax credits.

The gross tax gap is the amount of true tax liability that is not paid voluntarily and timely. **The estimated annual gross tax gap for Tax Years (TY) 2014-2016 is $496 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 estimated VCR is 85.0 percent.**

The gross tax gap comprises three components:

- Nonfiling (tax not paid on time by those who do not file required returns on time, $39 billion),
- Underreporting (tax understated on timely filed returns, $398 billion), and
- Underpayment (tax that was reported on time, but not paid on time, $59 billion).

The net tax gap is the gross tax gap less tax that subsequently will be paid, either voluntarily but late or collected through IRS administrative and enforcement activities. The net tax gap is the portion of the gross tax gap that will not be paid. **An estimated $68 billion of the gross tax gap eventually will be paid, resulting in a TY 2014-2016 net tax gap of $428 billion.** The Net Compliance Rate (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 87.0 percent.**

The tax gap estimates are also segmented by type of tax. The individual income tax makes up the largest component of the tax gap, contributing $357 billion to the gross tax gap and $306 to the net tax gap. The second and third largest components involve employment tax, which includes self-employment, FICA and FUTA tax, and corporation income tax.

Comparison with Previous Estimates

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 (for example, shifts toward those activities with higher or lower compliance rates), changes in tax law and tax administration practices, updated data and improved methodologies, and changes in underlying compliance behavior on the part of taxpayers, tax preparers, and other tax advisors.

The estimated VCR for TY 2014-2016 (85.0 percent) is slightly higher than the revised TY 2011-2013 estimate (83.7 percent). However, the TY 2014-2016 gross and net tax gap estimates of $496 billion and $428 billion, respectively, are higher than their respective revised TY 2011-2013 estimates by $58 billion

(gross) and by $48 billion (net). These increases can be attributed to economic growth between the two periods as evidenced by the more than 23 percent increase in true tax liability.

The Effect of Information Reporting on Tax Compliance

Consistent with findings from earlier tax gap analyses, compliance is higher when amounts are subject to information reporting and even higher when also subject to withholding. 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. For amounts subject to substantial information reporting but not withholding, it is 6 percent; and for income amounts subject to little or no information reporting, such as nonfarm sole proprietor income, it is 55 percent.

Tax Gap Projections, TY 2017-2019

This tax gap estimate release includes tax gap projections for the TY 2017-2019 timeframe. **The projected annual gross tax gap for the TY 2017-2019 timeframe is $540 billion. The VCR is projected to be 85.1 percent. An estimated annual $70 billion of the gross tax gap is expected to be paid eventually resulting in an annual net tax gap of $470 billion. The NCR projection is 87.0 percent.** The underreporting tax gap accounts for $35 billion of the $44 billion increase between the TY 2014-2016 gross tax gap estimate and the TY 2017-2019 projection. The rest of the difference is due to increases in the underpayment tax gap of $7 billion and the nonfiling tax gap of $2 billion.

Methodology

In keeping with recent tax gap releases, the new estimates and projections in this report reflect an estimated average compliance rate and associated annual tax gap covering a timeframe of three tax years. The approaches used to estimate the various tax gap components for TY 2014-2016 generally follow the methods used for the previous TY 2011-2013 estimates, with some improvements. For the largest components, these TY 2014-2016 estimates, like the prior TY 2011-2013 estimates, are based on actual compliance data from completed examinations. Improvements for TY 2014-2016 are reflected in the individual income tax and self-employment tax nonfiling tax gap methodologies that incorporate an expanded set of data which includes information that was not available for previous estimates. The individual income tax underreporting tax gap estimation methodology is modified slightly to address changes in the underlying statistical sample data that are the foundation of that component estimate. The estate tax nonfiling and underreporting tax gap estimates reflect updated methodologies that take into account recent increases in the filing threshold that greatly reduced the number of estates subject to this tax.

A particular challenge for tax gap estimation is the time it takes to collect certain compliance data, especially data on underreporting that come from completed examinations. Waiting for the data to become available allows the estimates to reflect the compliance behavior for the years of the estimates, but by then the timeframe of the estimates can be several years prior to the year of the tax gap release. To address this issue, the current release includes tax gap projections for TY 2017-2019 as a bridge between the competing priorities of the need for more contemporaneous tax gap estimates and having tax gap estimates based on compliance data for the timeframe of the estimates. Differences between the estimation methods used to produce the tax gap estimates and the projections vary by component, reflecting the timing in which compliance data become available for use in estimation. For example, the projections of the underreporting tax gap generally reflect the level of the tax gap that takes into account the growth in the reported tax or the

reported amount of line items on tax returns while *assuming compliance behavior has not changed from prior years*. The projections will be updated as additional compliance data become available.

Data Limitations

Given the complexity of the tax system and available data, no single approach can be used for estimating each component of the tax gap. Each approach is subject to measurement or nonsampling error; the component estimates that are based on samples are also subject to sampling error. For the individual income tax underreporting tax gap, Detection Controlled Estimation is used to adjust for measurement errors that results when some existing noncompliance is not detected during an audit. Other statistical techniques are used to control for bias in estimates based on operational audit data. Due to the heterogenous nature of the estimation methodology, no standard errors are reported; however, the user should be mindful of these limitations when using these estimates.

Given available data, these are the best possible estimates of the tax gap components presented. However, the estimates cannot fully represent noncompliance in some components of the tax system, particularly as it relates to corporation income tax, income from flow-through entities, foreign or illegal activities, and digital assets, because data are lacking. For example, the IRS does not have a reliable method for estimating the corporation income tax nonfiling tax gap. The tax gap associated with illegal activities has been outside the scope of tax gap estimation because the objective of government is to eliminate those activities, which would eliminate any associated tax. With respect to noncompliance associated with digital assets and other emerging issues, it takes time to develop the expertise to uncover associated noncompliance and for examinations to be completed that can be used to measure the extent of that noncompliance. Notwithstanding, the IRS is actively working on new methods for estimating and projecting the tax gap to better reflect changes in taxpayer behavior as they emerge.

2 Introduction

This report presents estimates of the tax gap for the Tax Year (TY) 2014-2016 timeframe and tax gap projections for TY 2017-2019. It also provides revised estimates for TY 2011-2013 that incorporate data that were not yet available when the estimates were initially released. The tax gap is a measure of the level of overall noncompliance 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. Like the TY 2011-2013 tax gap estimates, the estimates presented in this report reflect estimated average compliance rates and associated annual tax gap amounts covering a timeframe of three tax years.

The gross tax gap is the amount of true tax that is not paid voluntarily and timely. The net tax gap is the gross tax gap less tax that subsequently will be paid, either voluntarily but late or collected through IRS administrative and enforcement activities. The net tax gap 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 nonrefundable tax credits. The IRC allows for various refundable and nonrefundable 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, their "tax" for purposes of tax gap estimation is zero or negative.

The tax gap framework separates noncompliance into components by type of tax and source of noncompliance. There are three primary sources of noncompliance that result in payment of less than the true tax: (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. The amount of tax paid by taxpayers can be observed. The counterfactual amount, which is the amount of tax that should have been paid by taxpayers, is not observed. The difference between these two amounts is the gross tax gap. The asymmetry of information between taxpayers and the IRS, even with third-party information reporting and the statutory 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.

Estimating the tax gap is inherently challenging and, given the complexity of the tax system and available data, no single approach can be used for estimating each component. Each approach is subject to nonsampling error; the component estimates that are based on samples are further subject to sampling error. The uncertainty of the estimates, therefore, is not readily captured by standard errors that typically accompany population estimates based on sample data. For that reason, standard errors, confidence intervals, and significance tests for statistical comparisons across years are not reported. When using these estimates and making comparisons across years, the user should be mindful of these limitations.

The estimates and projections were prepared by IRS staff using methodologies developed from research and analysis conducted or sponsored by the IRS. Estimating the tax gap requires assessing the merits of alternative methodologies, assumptions, and data sources. This report provides summary information about

the estimation methodologies used to produce these estimates of the tax gap. More detailed information about the underlying approaches and assumptions can be found in other documents.[1]

The next section of the report presents an overview of the tax gap concepts and estimates. It contains an updated schematic representation of the estimates, known as the tax gap "map" and an updated "visibility" figure 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 that apply to the TY 2014-2016 timeframe. Section 4 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. The final section of the report covers the TY 2017-2019 projections.

3 Tax Gap Estimates for Tax Years 2014-2016

The primary focus of tax gap estimation is to measure tax compliance behavior. The tax gap concept translates noncompliant behavior into measures that reflect tax not paid voluntarily and/or timely as a result of the noncompliant behavior. The concepts and measures are defined on a tax year basis.

3.1 Tax Gap Concepts: Dollar Measures

Tax gap 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. The gross tax gap measure is 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 eventually will be paid. This report presents estimates of the payments at an aggregate level and 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. After subtracting estimates of enforced and other late payments for each type of tax, this report 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 concept associated with the underreporting tax gap. The NMA is the dollar amount of misreporting associated with a particular tax return or schedule line item. Although most often a NMA reflects an amount of income, expense, or similar line item that has been misreported, the NMA is also defined for the total amount of tax misreported. Since amounts reported on tax return and schedule lines can be either positive or negative and can be overstated or understated, the actual computation 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 calculated as the sum of all amounts understated minus the sum of all amounts overstated. 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 calculated 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 typically is 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.

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[1] See https://www.irs.gov/statistics for additional tax gap reports and documents.

3.2 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 in the aggregate.[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 other 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 one minus the ratio of the net tax gap to total true tax.

Two other measures are used only for the underreporting tax gap. The net misreporting percentage (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, it is the sum of the absolute values. The NMP is a complement to the NMA.

The voluntary reporting rate, or VRR, is another underreporting tax gap measure. 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 and is a complement to the underreporting tax gap for a particular type of tax.

3.3 Significant Tax Law and Other Changes Since Tax Year 2011-2013

Tax law and the level of economic activity can affect the tax gap. Major tax legislation enacted for the TY 2014-2016 timeframe included the Protecting Americans from Tax Hikes (PATH) Act of 2015, which made permanent or extended the tax benefits for individual and business taxpayers and enacted program integrity provisions for certain individual tax credits.

Legislation enacted in December 2017 and known as the Tax Cuts and Jobs Act (TCJA) made permanent changes to the corporation income tax and temporary changes to the individual income tax. The TCJA reduced the top corporate income tax rate from 35 percent to 21 percent. The corporation Alternative Minimum Tax was eliminated and there were rule changes for businesses regarding deductions, depreciation, expensing, credits, treatment of foreign source income, cost recovery, and accounting methods. Changes to the individual income tax made by TCJA included a general lowering of income tax rates, repeal of personal and dependent exemptions, increases in the standard deductions, elimination of or limits on certain itemized deductions, expansion of the child tax credit, and a new deduction related to pass-through business income.

The total number of corporation income tax returns filed continued to decline during the TY 2014-2016 timeframe, although the number of large corporation income tax returns increased. Reported income tax after credits on corporation income tax returns increased with the average for the TY 2014-2016 timeframe about $60 billion higher than for the TY 2011-2013 timeframe.

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

3.4 Estimates for Tax Years 2014-2016

Like the TY 2011-2013 estimates, the estimates presented in this report reflect estimated average compliance rates and associated annual tax gap amounts covering a timeframe of three tax years. The approaches used to estimate the various tax gap components for TY 2014-2016 generally follow the methods used for the previous TY 2011-2013 estimates. The methods for each component are described later in the report.

There are a few changes worth highlighting. For TY 2014-2016, the individual income tax and self-employment tax nonfiling tax gap methodologies incorporate an expanded set of data which includes information that was not available for previous estimates. The estate tax nonfiling and underreporting tax gap estimates are no longer developed by applying previously estimated compliance rates to reported data. Instead, new analyses were completed and used to develop the estimates.[3]

The individual income tax underreporting tax gap estimation methodology was modified slightly to address the fact that the NRP statistical sample for TY 2016 was limited to the subset of the individual income tax return filing population that reported certain individual income tax credits. The methodology for the individual income tax underreporting tax gap was the primary driver behind the decision to pool three tax years for tax gap estimation beginning with the TY 2008-2010 estimates. The pooling of three years of NRP data was envisioned as part of the implementation of annual NRP individual income tax reporting compliance samples beginning with TY 2006. The three-year timeframe is used in this report even though the NRP TY 2016 sampling frame included only returns with certain credits. Through TY 2015, the NRP sample design allocated evenly over three tax years the total number of returns that previously would have formed a single larger periodic sample designed around certain statistical precision measures. Resource constraints led the IRS to reduce the number of NRP returns beginning with TY 2016. For TY 2016, the NRP sample design only included returns that claimed the American Opportunity Tax Credit or the Child Tax Credit or the Earned Income Tax Credit or the Net Premium Tax Credit or that required reconciling the Advance Premium Tax Credit with the Premium Tax Credit. Therefore, the TY 2014-2016 individual income tax underreporting tax gap estimates reflect data from the TY 2014-2016 timeframe for those line items and data from the TY 2014-2015 timeframe for all other line items. This approach assumes that the compliance behavior for most line items for TY 2016 is accurately reflected by the TY 2014-2015 tax gap estimates.

3.4.1 Overall Gross and Net Tax Gap

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. The estimated annual gross tax gap for the TY 2014-2016 timeframe is $496 billion. An estimated $68 billion of the gross tax gap eventually will be paid resulting in a net tax gap of $428 billion. The voluntary compliance rate (VCR) is 85.0 percent. The estimated net compliance rate (NCR) is 87.0 percent.

Table 1 on page 10 reports the TY 2014-2016 tax gap estimates for the major components, along with the previously published and revised TY 2011-2013 estimates and a decomposition of the changes between the estimates.

[3] The estimation methods are similar to those used in developing the TY 2006 estate tax underreporting and nonfiling tax gap estimates.

Figure 1. TY 2014-2016 Tax Gap Map

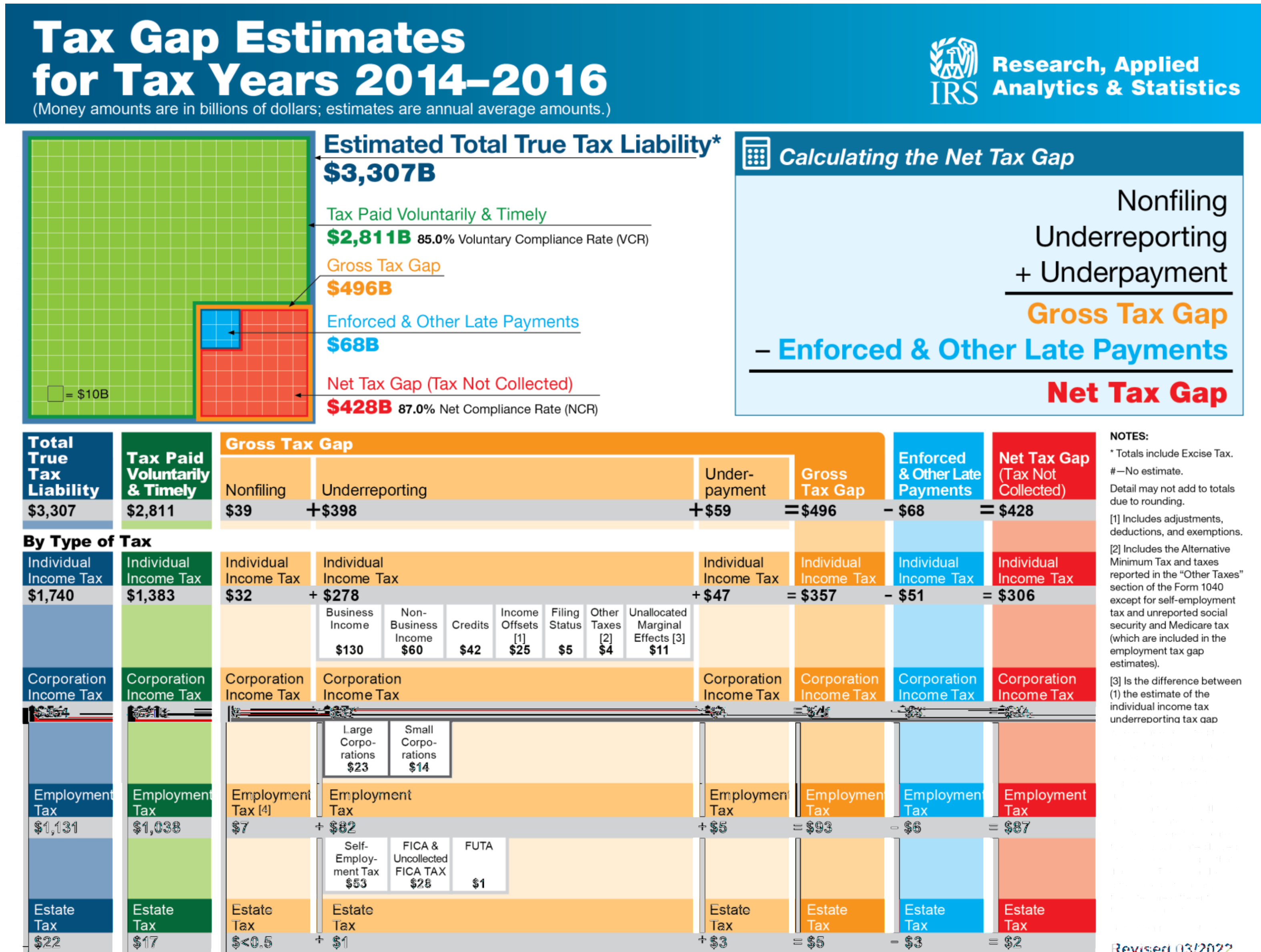


Table 1. Decomposition of Differences in TY 2011-2013 and TY 2014-2016 Tax Gap Estimates

[Money amounts are in billions of dollars]

Tax Gap Component	TY 2011–2013 Prior Published [1]	TY 2011–2013 Revised[1]	TY 2014–2016 [1]	Decomposition of Difference Between TY 2014–2016 Estimates and Prior Published TY 2011–2013 Estimates		
				Total	Due to Updated Methods[2]	Due to Other Factors[3]
Estimated Total True Tax	**$2,683**	**$2,688**	**$3,307**	**$625**	**$5**	**$620**
Gross Tax Gap	**$441**	**$438**	**$496**	**$55**	**-$3**	**$58**
Nonfiling Tax Gap	$39	$37	$39	$0	-$2	$2
Underreporting Tax Gap	$352	$349	$398	$46	-$3	$49
Underpayment Tax Gap	$50	$52	$59	$9	$2	$7
Voluntary Compliance Rate	**83.6%**	**83.7%**	**85.0%**	**1.4%**	**0.1%**	**1.3%**
Enforced and Other Late Payments	**$60**	**$58**	**$68**	**$8**	**-$1**	**$9**
Net Tax Gap [4]	**$381**	**$380**	**$428**	**$47**	**-$1**	**$48**
Net Compliance Rate	**85.8%**	**85.9%**	**87.0%**	**1.3%**	**0.1%**	**1.2%**

[1] The estimates are the annual averages for the covered timeframe.

[2] Difference between the prior published TY 2011–2013 and TY 2014–2016 tax gap estimates accounted for by updated methods (includes updated data).

[3] Difference between the prior published TY 2011–2013 and TY 2014–2016 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 paid.

Detail may not add to total due to rounding.

Dollar amounts are in billions.

Table 1 includes revised TY 2011-2013 tax gap estimates by tax gap component. Although some compliance data are available for analysis soon after tax returns are filed, other data are not available for several years. The examination data for large corporation income tax returns is an example of the latter. The revised TY 2011-2013 estimates incorporate data that were not available in 2019 when the initial TY 2011-2013 estimates were developed. The revised TY 2011-2013 gross tax gap estimate is $438 billion or about $3 billion lower than the prior estimate of $441 billion. The revised TY 2011-2013 VCR is 83.7 percent or about 0.1 percentage points higher than the prior estimate of 83.6 percent.

The three right-most columns in Table 1 show the results of a decomposition of the differences in the previously published TY 2011-2013 estimates and the TY 2014-2016 estimates into the portion attributable to methodological updates and the portion attributable to other factors. This was determined by applying the current methodology to TY 2011-2013 and attributing the difference between those estimates and the published estimates to updates in methodology. The remainder is attributable to other factors. Very little of the difference in the estimates is attributable to methodological changes.

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, tax preparers, and other tax advisors. Figure 2 on the next page shows the gross tax gap and VCR estimates for TY 2001 and later. During the TY 2014-2016 timeframe, the economic expansion and recovery from the Great Recession continued. The impact of the Great Recession is reflected in estimated gross tax gaps for TY 2008-2010 and TY 2011-2013 that are lower than for TY 2006.

Even though the estimated VCR for TY 2014-2016 is slightly higher than the revised TY 2011-2013 estimate, the estimated gross tax gap nevertheless increased because of the growth in the economy. The TY 2014-2016 gross and net tax gap estimates of $496 billion and $428 billion respectively are higher than their respective revised TY 2011-2013 estimates by $58 billion (gross) and by $48 billion (net) because the estimated average annual true tax for the TY 2014-2016 timeframe is about $620 billion higher than the revised estimate for the TY 2011-2013 timeframe. The TY 2014-2016 VCR estimate of 85.0 percent is 1.3

percentage points higher than the revised TY 2011-2013 estimate. The TY 2014-2016 NCR of 87.0 percent is about 1.2 percentage points higher than the revised TY 2011-2013 estimate.

The estimated TY 2014-2016 gross tax gap of $496 billion exceeds the previous high estimate which was for TY 2006 and prior to the Great Recession. The estimated TY 2014-2016 VCR is higher than the prior four estimates. Three of the prior estimates were either 83.7 percent or 83.8 percent and the TY 2014-2016 VCR is higher than those by about 1.2 to 1.3 percentage points. The TY 2006 VCR was lower than those three estimates by about 1.4 to 1.5 percentage points.

Figure 2. Tax Gap and Voluntary Compliance Rate Estimates: TY 2001, TY 2006, TY 2008-2010 (Annual Average), TY 2011-2013 (Annual Average) and TY 2014-2016 (Annual Average)

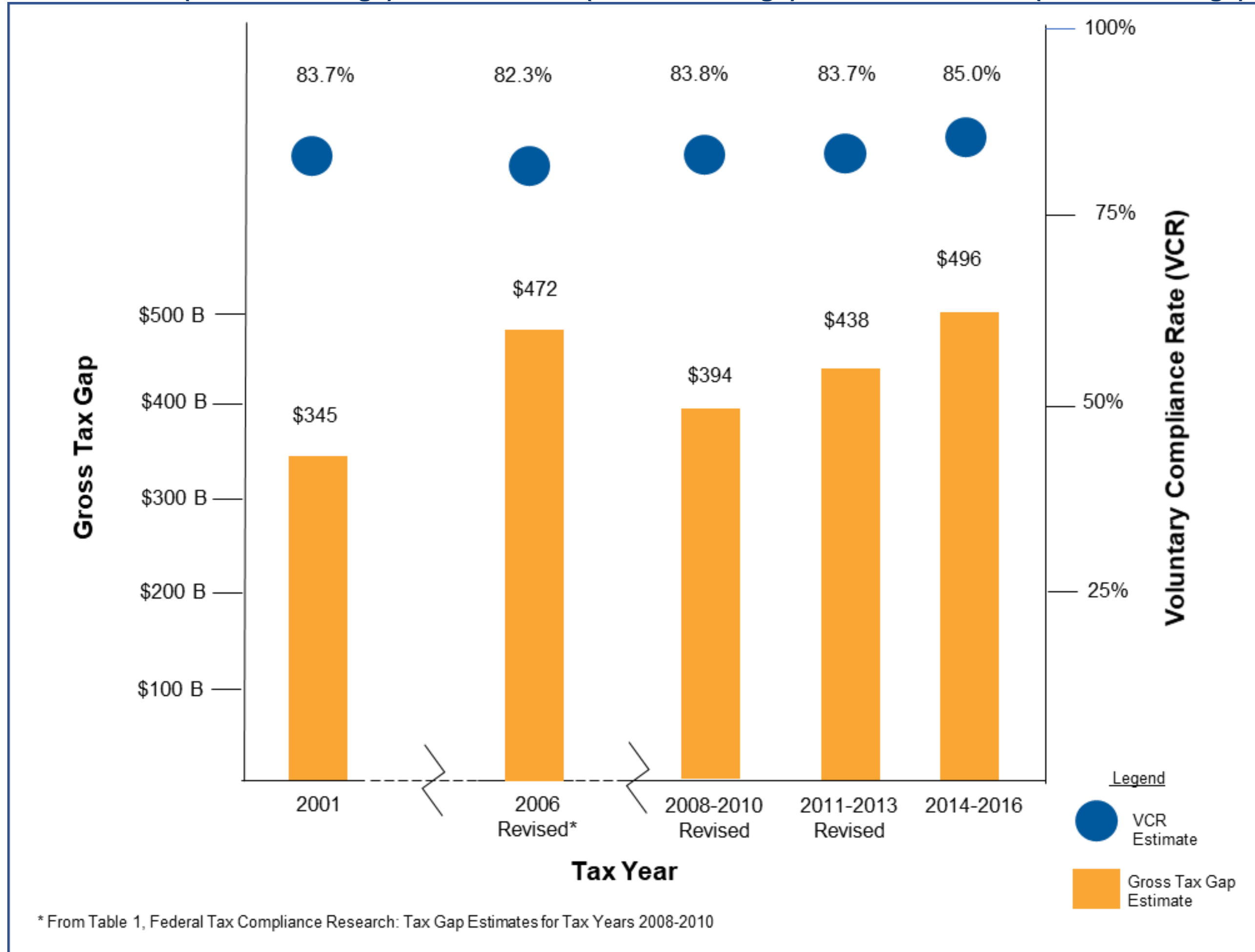


Table 2 on page 11 provides a breakout of the nonfiling, underreporting, and underpayment tax gaps into major subcomponents and reports their shares of the gross tax gap.

3.4.2 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 required tax returns that were filed after the filing deadline or valid extension date-or were not filed at all.

Table 2. Tax Gap Estimates for Tax Years 2014-2016[1]

[Money amounts are in billions of dollars]

Tax Gap Component	TY 2014–2016[1]	Share of Gross Tax Gap
Estimated Total True Tax	**$3,307**	
Gross Tax Gap	**$496**	**100%**
Voluntary Compliance Rate	***85.0%***	
Enforced and Other Late Payments	**$68**	
Net Tax Gap	**$428**	
Net Compliance Rate	***87.0%***	
Nonfiling Tax Gap	**$39**	**8%**
Individual Income Tax	$32	7%
Self-Employment Tax	$7	1%
Estate Tax	[3]	[2]
Underreporting Tax Gap	**$398**	**80%**
Individual Income Tax	**$278**	**56%**
Non-Business Income	$60	12%
Business Income	$130	26%
Adjustments, Deductions, Exemptions	$25	5%
Filing Status	$5	1%
Other Taxes [4]	$4	1%
Unallocated Marginal Effects [5]	$11	2%
Credits	$42	9%
Corporation Income Tax	**$37**	**7%**
Small Corporations (assets under $10M)	$14	3%
Large Corporations (assets of $10M or more)	$23	5%
Employment Tax	**$82**	**17%**
Self-Employment Tax	$53	11%
Uncollected Social Security and Medicare Tax	[3]	[2]
FICA and FUTA Tax	$29	6%
Estate Tax	**$1**	**[2]**
Underpayment Tax Gap	**$59**	**12%**
Individual Income Tax	$47	9%
Corporation Income Tax	$4	1%
Employment Tax	$5	1%
Estate Tax	$3	1%
Excise Tax	[3]	[2]

[1] The estimates are the annual averages for the Tax Year 2014-2016 timeframe.

[2] Less than 0.5 percent.

[3] Less than $0.5 billion.

[4] The *Other taxes* component includes the Alternative Minimum Tax, Excess APTC Repayment, and taxes reported in the "Other Taxes" section of the Form 1040 except for self-employment tax and unreported social security and Medicare tax (which are included in the employment tax gap estimates).

[5] The *Unallocated marginal effects* component reflects the difference between (1) the estimate of the individual income tax underreporting tax gap where underreported tax is calculated based on all misreporting combined and (2) the estimate of the individual income tax underreporting tax gap based on the sum of the tax gaps associated with each line item where the line item tax gap is calculated based on the misreporting of that item only. There may be a difference whenever more than one line item has been misreported on the same return and the combined misreporting results in a higher marginal tax rate than when the tax on the misreported amounts is calculated separately.

Detail may not add to total due to rounding.

As shown in Table 2 on the previous page, the nonfiling tax gap accounts for about 8 percent of the gross tax gap. The estimated TY 2014-2016 nonfiling tax gap of $39 billion is $2 billion higher than the revised TY 2011-2013 nonfiling tax gap of $37 billion.

The individual income tax nonfiling tax gap is estimated to be $32 billion, which is about 7 percent of the gross tax gap. The self-employment tax nonfiling tax gap is estimated to be $7 billion, which is about 1 percent of the gross tax gap. The estate tax nonfiling tax gap is estimated to be less than $0.5 billion, which is less than one half of one percent of the gross tax gap.

As a share of the total nonfiling tax gap, the individual income tax nonfiling tax gap is about 83 percent. The self-employment tax nonfiling tax gap is about 17 percent of the estimated nonfiling tax gap, and the estate tax nonfiling tax gap is about 1 percent.

3.4.3 Underreporting Tax Gap

As shown in Table 2, of the $496 billion gross tax gap, $398 billion (approximately 80 percent) is estimated to result from the underreporting of true tax on timely filed returns. The estimated TY 2014-2016 underreporting tax gap of $398 billion is $49 billion higher than the revised TY 2011-2013 underreporting tax gap of $349 billion.

The individual income tax underreporting tax gap is $278 billion or 56 percent of the gross tax gap. The corporation income tax underreporting tax gap, the employment tax underreporting tax gap, and the estate tax underreporting tax gap are 7 percent, 17 percent, and less than one half of one percent of the gross tax gap, respectively.

As a share of the underreporting tax gap, the individual income tax underreporting tax gap estimate is about 70 percent of the underreporting tax gap. The corporation income tax underreporting tax gap estimate is about 9 percent, the employment tax underreporting tax gap estimate is about 21 percent, and the estate tax is less than one half of one percent of the underreporting tax gap.

3.4.4 Underpayment Tax Gap

About 12 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 $59 billion. This estimated TY 2014-2016 underpayment tax gap of $59 billion is $7 billion higher than the revised TY 2011-2013 underpayment tax gap of $52 billion.

About 9 percent of the gross tax gap, about $47 billion, is from underpayment of individual income tax. Underpayment of corporation income taxes accounts for 1 percent of the gross tax gap. Underpayment of employment taxes (Federal Insurance Contributions Act, FICA, Federal Unemployment Tax Act, FUTA, Self-Employment Contributions Act, SECA and the railroad retirement tax) accounts for 1 percent of the gross tax gap. These shares correspond to $4 billion (corporation income taxes) and $5 billion (employment taxes) respectively. Estate tax accounts for about $3 billion or about 1 percent of the gross tax gap. Excise tax accounts for less than $0.5 billion.

As shares of the underpayment tax gap, about 79 percent is from underpayment of individual income tax. Underpayment of corporation income taxes accounts for 7 percent of the underpayment tax gap. Underpayment of employment taxes accounts for 8 percent of the underpayment tax gap. Estate tax accounts for about 5 percent of the of the underpayment tax gap. Excise tax accounts for less than one-half of 1 percent.

3.4.5 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 $68 billion. About 75 percent of the total, or $51 billion, is associated with individual income tax. About 11 percent of the total is the $8 billion in corporation income tax enforced and other late payments. Employment tax enforced and other late payments are 10 percent of the total or $6 billion. Estate tax enforced and other late payments are $3 billion or about 4 percent of the total. Excise tax enforced and other late payments account for less than one-half of 1 percent of all enforced and other late payments.

3.4.6 Net Tax Gap by Type of Tax

Estimates of enforced and other late payments by type of tax are subtracted from the respective gross tax gap estimates to obtain the net tax gap estimates by type of tax. As shown on the Tax Gap Map, the net tax gap for individual income tax is $306 billion and for corporation income tax is $34 billion. The net tax gap for employment taxes is $87 billion. The estate tax net tax gap is $2 billion. The excise tax net tax gap is less than $0.5 billion.[4]

3.4.7 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 estimates remain largely unchanged when compared with the revised TY 2011-2013 estimates.

Table 3. Voluntary Compliance Rates By Type Of Tax, Tax Years 2011-2013, And 2014-2016[1]

Tax Gap Component	Voluntary Compliance Rate			Distribution of Liability		
	TY2011–TY2013 Prior Published	TY2011–TY2013 Revised	TY2014–TY2016	TY2011–TY2013 Prior Published	TY2011–TY2013 Revised	TY2014–TY2016
Overall (all taxes combined)	84%	84%	85%	100%	100%	100%
Individual Income Tax	78%	77%	79%	52%	52%	53%
Corporation Income Tax	86%	87%	88%	11%	11%	11%
Employment Tax	91%	91%	92%	34%	34%	34%
Estate Tax	81%	82%	79%	1%	1%	1%
Excise Tax	N/A	N/A	N/A	2%	2%	2%

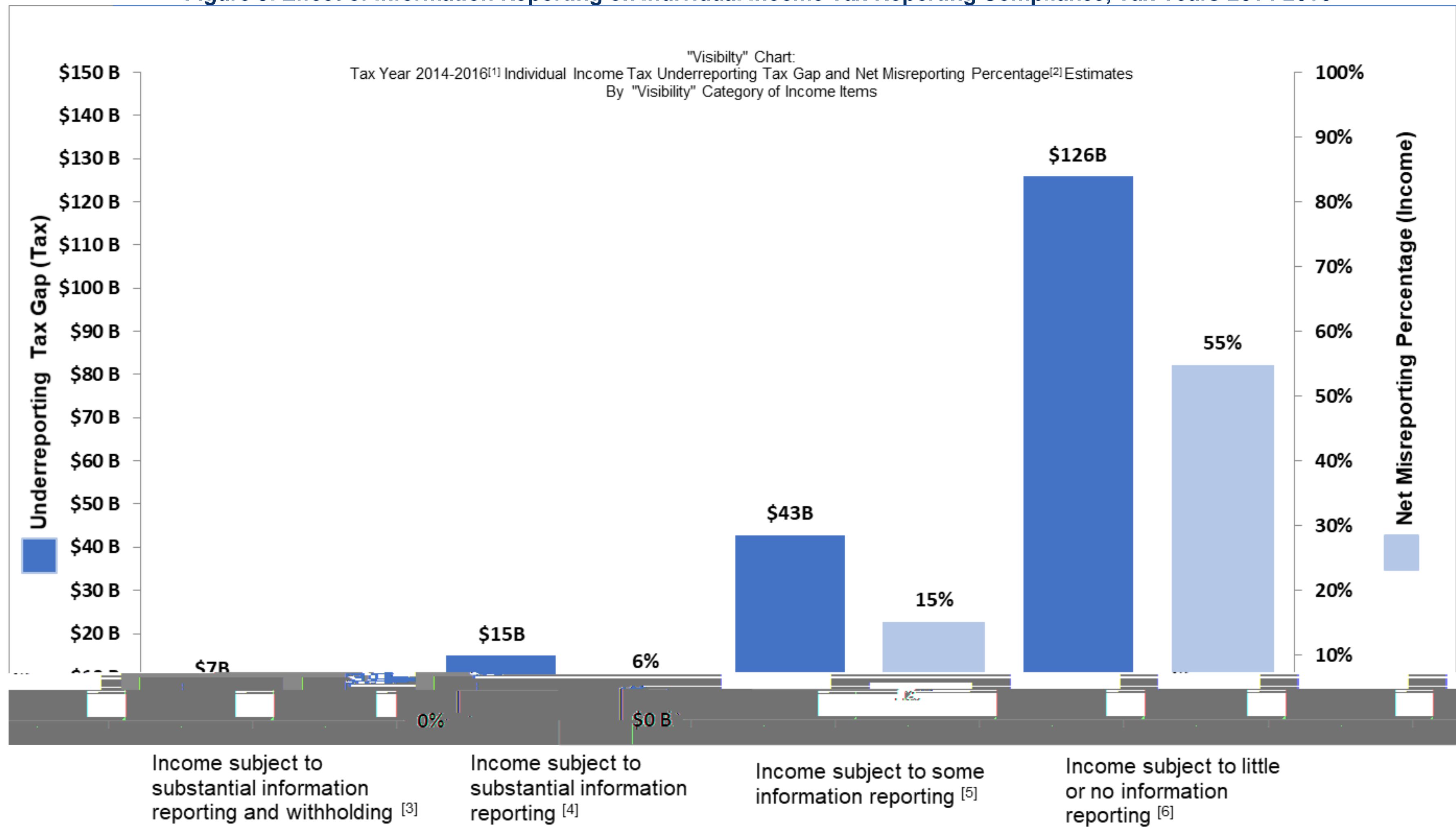
[1] The Voluntary Compliance Rates reflect all three types of noncompliance: Nonfiling, underreporting, and underpayment.

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

These most recent estimates continue to confirm the relationship between reporting compliance and third-party information reporting that was demonstrated by prior tax gap releases. 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 Figure 3 on the next page, 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, the NMP is 6 percent; and for income amounts subject to little or no information reporting, such as nonfarm proprietor income, the NMP is 55 percent. The grouping of items into categories is the same as for the TY 2008-2010 and TY 2011-2013 estimates.

[4] The excise tax gap is included in the total tax gap numbers but is not shown separately in the tax gap map.

Figure 3. Effect of Information Reporting on Individual Income Tax Reporting Compliance, Tax Years 2014-2016



4 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. New and updated compliance data were available for most of the components. The general methodological approaches taken for the TY 2014-2016 estimates follow prior estimation practices. However, there have been some changes and enhancements facilitated in part by the new data and these are noted in the following methodological overviews for each tax gap component.

4.1 Nonfiling Tax Gap

Estimates of 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.

4.1.1 Individual Income Tax Nonfiling Tax Gap

Taxpayers who expect to have a tax liability are required to prepay a significant share of their estimated tax liability for a given year through withholding 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 nonfilers whose prepayments 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.

Since the publication of the TY 2011-2013 tax gap estimates, IRS has been able to improve upon both the “Census Method” used to estimate the TY 2008-2010 individual income tax nonfiling tax gap and the “Administrative Data Method” used to estimate the TY 2011-2013 nonfiling tax gap by making it possible to take advantage of the strengths of each approach while overcoming most of their weaknesses. Like the previously used Census Method, this hybrid approach links Census survey data to tax administrative data, but unlike the previous method, it links the Census records to far more substantial tax records for nonfilers. This makes it possible to make reliable estimates of the unpaid tax obligation of each nonfiler in a representative sample using the demographic characteristics provided in the Census survey data (to establish tax units and their filing status) and using the detailed income and tax withholding information provided in the tax administrative data. This improved methodology is described in more detail below. As with previous methods, it separates nonfilers into two groups: (1) “late filers” (those who filed a required return after the extended due date and within four years of the tax year of interest); and (2) “not-filers” (those who did not file a required return within four years of the tax year of interest).[5]

4.1.1.1 Late Filer Methodology

The method used to estimate the tax gap associated with late filers remains unchanged, and it is based solely on tax administrative data. The timing of their return filing and their timely payments of tax are known with certainty. Their tax liability is based largely on what they report on their tax return (e.g., filing status, income, deductions, credits, etc.), but this is supplemented by income reported for them by third parties whenever this was not reported by the taxpayer on the tax return. Unlike for not-filers, additional self-employment income is not imputed to these returns.

[5] The “not-filer” terminology is specific to the individual income tax and self-employment tax nonfiling tax gap estimates.

4.1.1.2 Not-Filer Methodology

The improved method used to estimate the nonfiling tax gap attributable to not-filers relies on linking individual records from the Annual Social and Economic Supplement of the Current Population Survey (CPS-ASEC)—a representative Census sample of the U.S. population—to detailed income and tax withholding records of the entire population from tax administrative data. The records are linked anonymously through the use of a unique Protected Identification Key (PIK) assigned by the Census Bureau to both sets of records, revealing which individuals in the Census sample did not appear as a primary or secondary taxpayer on a timely or late filed return. These potential not-filers are assigned to tax units and filing statuses based on the demographic information recorded in the CPS-ASEC data. In addition to the income reported in the detailed tax administrative data from third-party information returns, self-employment income is imputed to some of these potential nonfilers based on the extent of self-employment income established among filers in the IRS National Research Program's audits of stratified random samples of tax returns. Potential nonfilers whose income is sufficient to give them a filing obligation are not-filers. The gross tax gap associated with not-filers is calculated by estimating their tax liability (after tax credits) and then subtracting from that amount the amount of tax that they had paid on time (e.g., through withholding).

In summary, this estimation methodology incorporated two main improvements compared with earlier methodologies: (1) it linked Census data to detailed (rather than very limited) tax administrative data; and (2) for the imputations of self-employment income, the formulas were estimated based on the extent to which such income was established in representative audits of filed returns rather than being based solely on the amount of such income that taxpayers voluntarily report on their tax returns.[6] The resulting individual income tax nonfiling tax gap estimate for the TY 2014-2016 timeframe is $32 billion. This is about $1 billion higher than the previously published TY 2011-2013 estimate.

4.1.2 Self-Employment Tax Nonfiling Tax Gap

The nonfiling tax gap associated with self-employment tax is a byproduct of estimating the nonfiling 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 is $7 billion. This is about $1 billion higher than the previously published TY 2011-2013 estimate.

4.1.3 Estate Tax Nonfiling Tax Gap

The TY 2014-2016 estate tax nonfiling tax gap estimate reflects the tax gap associated with late filers. The nonfiling tax gap associated with late filed returns (late-filer tax gap) is estimated from the tax reported on actual late filed returns net of timely made payments and is less than $0.5 billion. The estate tax nonfiling tax gap estimate no longer reflects the nonfiling tax gap associated with required returns that will not be filed. Prior methodology used wealth-adjusted mortality curves developed from the University of Michigan Health and Retirement Study and the National Center for Health Statistics to estimate the number of returns with an estate tax filing obligation. However, the increase in the estate tax filing threshold meant the survey data had too few observations to support an estimate.

[6] This accounts for self-employment income that filers do not report, but that can be established by audits.

4.2 Underreporting Tax Gap

4.2.1 Individual Income Tax and Self-Employment Tax Underreporting Tax Gaps

4.2.1.1 Overview

The basic approach for estimating the TY 2014-2016 individual income tax and self-employment tax underreporting tax gaps is the same as that used for the TY 2008-2010 and TY 2011-2013 estimates. Examiner-recommended adjustments from the statistically representative NRP samples of individual income tax filers are the foundation of the estimates.[7] The methodology uses an econometric technique to account for income that is not detected during the audits, an inherent limitation in situations where taxpayers are intentionally noncompliant or conduct business in cash with poor or nonexistent 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.

4.2.1.2 Methodology for Tax Years 2014-2016

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 14,000 returns—roughly one-third the size of prior periodic studies. The annual samples can be combined over several years to provide compliance estimates at a level of reliability similar to a much larger single-year sample. 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 generally 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 audits of the scope and quality 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 include 15 or more returns audited by the same examiner. To meet this requirement, it was necessary to pool multiple tax years of NRP data. TY 2011-2015 data were pooled in order to have sufficient observations and to improve the reliability of the estimates of undetected income. Since NRP data from TY 2014-2015 were used in the DCE estimation, the actual results of the DCE estimation for the TY 2014-2015 sample were available to estimate the individual income tax underreporting tax gap.[10] TY 2016 NRP data were not used for DCE estimation because the sampling frame was limited to returns that claimed certain credits or that required reconciling

[7] The NRP samples included tax filers living abroad for TYs 2008-2010 but did not include them for tax years after TY 2010.

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

[9] "Detection rate" is defined as the amount of unreported income detected during an audit 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.

[10] An imputation methodology was previously developed to allocate the DCE estimates derived from the pooled TY 2006–2008 NRP data to the TY 2008–2010 NRP data for the TY 2008–2010 tax gap estimates. That imputation methodology was no longer necessary beginning with the TY 2011–2013 estimates of the individual income tax underreporting tax gap.

the Advance Premium Tax Credit. However, DCE estimation produced detection equations that were applied to the TY 2016 NRP data under the assumption that estimated detection equations from TY 2011 through TY 2015 were applicable to TY 2016.

Since some income items with significant information reporting were not routinely classified, the estimation 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 data requirements for DCE 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 multiple years. [11] Table 4 shows the specific groupings of income items used for estimation.

Table 4: 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		

4.2.1.2.1 Additional Tip Income Adjustments

Tip income is concentrated in a few industries and occupations and 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 has a lower compliance rate than other wages and salaries and is harder to detect during an audit. To supplement the DCE estimates for wages and salaries, 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.

4.2.1.2.2 Tax Calculator

For each income item and return, the DCE estimation provides return-level predictions of the probability of undetected income and the amount of undetected income conditional on the presence of undetected income. The DCE estimation predicts a positive probability of undetected income for most line items on most returns, although this is typically very small for returns where no unreported income was detected. In order to simulate a realistic distribution of undetected income consistent with the predicted incidence of undetected income, a simulation process randomly allocates undetected income for each income item based on the probability of undetected income for that item on each return. This was done by assigning a random number to each return and then assigning undetected income to that return if the random number was less than the probability of undetected income for that return. This entire process is repeated ten times to create ten simulated TY 2014-2016 data sets.

[11] An example of such a DCE requirement is the need for at least 15 audits by the same auditor in which a given line item (or grouping of line items) was audited.

For the next step, which estimates underreported taxes resulting from total underreported income (both examiner-detected and DCE-undetected), a tax calculator is applied to individual observations (*i.e.*, tax returns) from the ten simulated TY 2014-2016 data sets. This process yields ten underreporting tax gap estimates for each line item, which are then averaged to produce the final underreporting tax gap estimate. The final line-item underreporting tax gap estimates are summed to estimate the overall individual income tax underreporting tax gap.

Estimating the tax gap associated with particular return line items in this second step requires an iterative analysis. Estimating the underreporting tax gap for each income item involves a process in which the additional income for each income item is added to the reported amount of income and then the additional tentative tax based on that additional income is calculated. [12] Then that additional income is dropped, and the process repeated for the next income item.

For filing status, the individual income tax underreporting 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 individual income tax underreporting 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 tax gap associated with credits.

4.2.1.2.3 Filing Status

The net misreported amount of tax associated with misreporting of filing status is 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 2014-2016 timeframe, the average annual tax gap associated with misreported filing status is $5 billion.

4.2.1.2.4 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. Beginning with the TY 2008-2010 tax gap estimates, 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 the total individual income tax underreporting tax gap and the sum of the individual line-item tax gaps is characterized in the tax gap reports as "unallocated marginal effects." For the TY 2014-2016 timeframe, the annual tax gap associated with unallocated marginal effects is $11 billion.

4.2.1.3 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

[12] Tentative tax is the amount reported on TY 2016 Form 1040 line 44.

subject to Medicare taxes, but not social security taxes. Undetected self-employment income (Schedules C and F) is 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 are allocated similarly. The tax calculator then calculates the amount of self-employment taxes that should have been reported.

Table 5. Individual Income Tax Underreporting Tax Gap by Source: Tax Years 2014-2016[1]

[Money amounts are in billions of dollars]

Tax Return Line Items	Tax			Line Item Amount
	Tax Gap	Share of Gross Tax Gap	Share of Individual Income Tax Underreporting Tax Gap	Net Misreporting Percentage[2]
Gross Tax Gap	**$496**	**100%**	**n.a.**	**n.a.**
Individual Income Tax Underreporting Tax Gap	**$278**	**56%**	**100%**	**17%**
Items Subject to Substantial Information Reporting and Withholding	**$7**	**1%**	**2%**	**1%**
Wages, salaries, tips	$7	1%	2%	1%
Items Subject to Substantial Information Reporting	**$15**	**3%**	**5%**	**6%**
Interest income	$1	[3]	[3]	4%
Dividend income	$1	[3]	[3]	4%
State income tax refunds	$1	[3]	[3]	9%
Pensions & annuities	$7	1%	2%	4%
Unemployment Compensation	[3]	[3]	[3]	12%
Taxable Social Security benefits	$6	1%	2%	13%
Items Subject to Some Information Reporting	**$43**	**9%**	**15%**	**15%**
Partnership, S-Corp, Estate & Trust, etc.	$25	5%	9%	12%
Alimony income	[4]	[4]	[4]	[4]
Capital gains[5]	$18	4%	6%	18%
Short-term Capital Gains	*$6*	*1%*	*2%*	*17%*
Long-term Capital Gains	*$12*	*2%*	*4%*	*16%*
Items Subject to Little or No Information Reporting	**$126**	**25%**	**45%**	**55%**
Form 4797 income	$4	1%	1%	35%
Other income	$16	3%	6%	42%
Nonfarm proprietor income	$80	16%	29%	57%
Farm income	$5	1%	2%	64%
Rents & royalties	$21	4%	7%	53%
Other Taxes	**$4**	**1%**	**1%**	**6%**
Unallocated Marginal Effects	**$11**	**2%**	**4%**	**n.a.**
Income Offsets (Adjustments, Deductions, Exemptions)	**$25**	**5%**	**9%**	**6%**
Total Credits	**$42**	**9%**	**15%**	**38%**
Filing Status	**$5**	**1%**	**2%**	**n.a.**

[1] The estimates are the annual averages for the Tax Year 2014-2016 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 or $0.5 billion.

[4] The estimate is based on a very small sample size. The estimated tax gap is less than $ 0.5 billion and net misreporting percentage is less than 5%.

n.a.: not applicable.

Detail may not add to total due to rounding.

4.2.1.4 Uncollected Social Security and Medicare Tax

Employees who did not report tips to their employers or whose employer did not withhold social security and Medicare taxes from their pay are required to report and pay the employee share of employment taxes on their individual income tax return. The tax calculator was used to calculate the employee's share of employment taxes that should have been reported for tips not reported to their employer and for wages where employment taxes were not withheld. As with the self-employment tax underreporting tax gap, these underreported FICA taxes are included in the employment tax underreporting tax gap and not the individual income tax underreporting tax gap. The estimate is less than one-half billion dollars.

4.2.1.5 Estimates for Tax Years 2014-2016

The estimates in Table 5 on the previous page and Table 6 below provide a breakdown of the components of the individual income tax underreporting tax gap. The income components in Table 5 are grouped by the "visibility" categories shown earlier in Figure 3. 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, including rents and royalties, reported on Schedules C, E, and F, accounts for 47 percent of the total individual income tax underreporting tax gap for TY 2014-2016. This consists of nonfarm proprietor income which accounts for 29 percent, flow-through income (partnerships, S corporations, and estates and trusts) which accounts for 9 percent, rent and royalty income which accounts for 7 percent, and farm income which accounts for 2 percent. Credits in the aggregate account for 15 percent of the individual income tax underreporting tax gap. The EITC accounts for 10 percent of the individual income tax underreporting tax gap, followed by the refundable and nonrefundable child tax credit (3 percent), the refundable and nonrefundable education credits (2 percent) and all other credits (1 percent).

Table 6. Individual Income Tax Underreporting Tax Gap by Type of Credit: Tax Years 2014-2016[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
Gross Tax Gap	**$496**	**100%**	**N/A**
Individual Income Tax Underreporting Tax Gap	**$278**	**56%**	**100%**
Total Credits	**$42**	**9%**	**15%**
Child Tax Credit and Additional Child Tax Credit	$8	2%	3%
EITC	$28	6%	10%
Education Credits	$5	1%	2%
All Other Credits	$2	[2]	1%

[1] The estimates are the annual averages for the Tax Year 2014-2016 timeframe.

[2] Less than 0.5 percent.

Detail may not add to total due to rounding.

4.2.2 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 "risk-based" 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 include any adjustments for income undetected by the examinations upon which the estimates are based. Using non-NRP data potentially biases the estimates upwards (if the analytical techniques described below do not fully adjust for the selection bias) while not adjusting for undetected income biases the estimates downwards. Despite these limitations, the corporate estimates are a reasonable estimate of corporation income tax noncompliance.

4.2.2.1 Small Corporation Income Tax Underreporting Tax Gap[13]

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 nonrepresentative operational audit data. The econometric model is estimated using the operational audit data and tax return data for TY 2009-2016 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 there is 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. Data from TYs 2009-2016 are used to jointly estimate the model for the final estimates. Examinations included in the final modeling were those selected based upon their discriminant function (DIF) score, through regular classification, or through statistical sampling.[14] The estimated small corporation income tax underreporting tax gap is $14 billion.

4.2.2.2 Large Corporation Income Tax Underreporting Tax Gap[15]

Similar to the small corporation income tax underreporting tax gap, the large corporation income tax underreporting tax gap estimates rely on operational audit data. The final estimate is based on the same

[13] Small corporations are defined as corporations reporting less than $10 million in assets, including those with no balance sheet.
[14] Examinations used in the modeling included some returns audited through the NRP TY 2010 small corporation reporting compliance study of corporations with a balance sheet and with assets less than $250,000. Estimates from the model for this subset of returns are consistent with the results of the NRP study.
[15] The large corporation income tax underreporting tax gap estimate consists of the income tax underreporting tax gaps of two subgroups of corporations with $10 million or more in assets. 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.

pareto/extreme value method that was used for the TY 2008-2010 and TY 2011-2013 large corporation income tax underreporting tax gap estimates.

4.2.2.2.1 Pareto/Extreme Value Methodology

The methodology adopted for the large corporation income tax underreporting tax gap uses the general observation from operational audit results that the majority of audit adjustments are 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 two conditions are met: (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.

Through the use of the Pareto distribution applied to audit adjustment data, extreme values of noncompliance among the largest corporations (corporations with assets over $250 million) can be used to estimate the noncompliance of the rest of the population. Operational audit data for the large corporations for TYs 2005-2011 were used to identify the audits with extreme values in terms of the proposed audit adjustments to tax. The first step is 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) are then estimated. This linear relationship is then used to estimate the total tax gap and voluntary reporting rate (VRR)[16] for the large corporations for TYs 2005-2011. The average VRR is then applied to the reported TY 2014-2016 tax liability of both the mid-size and large corporations arriving at a corporation income tax underreporting tax gap estimate of $23 billion.

4.2.3 Employment Tax Underreporting Tax Gap

The employment tax component of the underreporting tax gap includes social security and Medicare taxes under the Federal Insurance Contributions Act (FICA) and the Self-Employment Contributions Act (SECA), payments for federal unemployment insurance under the Federal Unemployment Tax Act (FUTA)., and railroad retirement and railroad unemployment repayment taxes under the Railroad Retirement Tax Act (RRTA). The estimate of the employment tax underreporting tax gap presented in this report covers taxes associated with FICA, FUTA, and SECA. There currently is no liability for repayment taxes under the RRTA. The FICA and FUTA taxes associated with employers of agricultural and household workers are also excluded from the estimates due to lack of compliance data. Therefore, the estimate of the employment tax underreporting tax gap presented in this report should be considered an underestimate of the "true" tax gap because estimates for some components are not available.

The components of the employment tax underreporting tax gap estimate that are associated with employer reporting of FICA and FUTA are estimated using information available from the National Research Program (NRP) Employment Tax Study for TYs 2008-2010. The NRP data are used to estimate compliance rates, specifically VRRs, for FICA and FUTA taxes for TY 2008-2010. These rates are then applied to the reported TY 2014-2016 population data for Form 941 filers (FICA) and Form 940 filers (FUTA) to generate estimates of underreported FICA and FUTA taxes for TY 2014-2016. The VRR estimates for FICA taxes

[16] 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.

are also applied to Form 944 filers. This process is conducted separately for three different types of employers that correspond to three IRS business operating divisions: small businesses (generally those with fewer than $10 million in assets) and self-employed, large businesses (generally those with $10 million or more in assets), and tax-exempt or government entities. Implicit in this methodology is the assumption that the employers excluded from the NRP sample have the same compliance rate as other employers of the same type.

The VRRs used in this report are the same as those developed for the TY 2011-2013 tax gap estimates. Because no new NRP employment tax study has been undertaken, no new data are available.

It is estimated that the employer FICA and FUTA employment tax underreporting tax gap for TY 2014-2016 is a combined $29 billion, with $28 billion from underreported FICA taxes and $1 billion from underreported FUTA taxes.

As described earlier in the report, the self-employment tax component of the employment tax underreporting tax gap estimate is based on underreported income data from the TY 2014-2016 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. The self-employment tax underreporting tax gap estimate is $53 billion. Similarly, the tax gap associated with uncollected FICA is also estimates in conjunction with the individual income tax underreporting tax gap and is less than one-half billion dollars.

4.2.4 Estate Tax Underreporting Tax Gap

Examination data on reporting compliance for statistically representative samples of filed returns is not available for estate tax returns. A methodology developed under contract for the IRS uses "risk-based" operational examination data and an econometric approach to attempt to adjust for the selection bias from using the operational examination data. This approach is similar to the methodology used for the small corporation income tax gap estimates and is the methodology used to develop the TY 2006 estimate.[17] However, unlike for the TY 2006 estimate, complete tax return data by death year, instead of processing year, were available. Operational audit data were combined with a random sample of tax returns filed timely for death years 2011-2016 in order to predict underreported tax on unaudited returns using an econometric model. The underreporting tax gap for each death year was estimated separately. The estate tax underreporting tax gap estimate for TY 2014-2016 is estimated to be $1.3 billion.

4.3 Underpayment Tax Gap

In contrast with other components of the tax gap, the underpayment tax gap is generally observed and can be tabulated from IRS data systems. The gross underpayment tax gap is the amount of tax liability that is reported on timely filed returns but is not paid on time. Underpayment tax gap estimates by type of tax and tax year are developed through a tabulation of IRS administrative data 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.

Employers withhold and deposit individual income tax 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

[17] 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.

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 because the ultimate liability in this case is the employees' individual income tax liability.

The amount of individual income tax underpayment tabulated in this way accounts for what employers report on timely filed returns, but do not pay on time. However, it does not account for situations in which an employer withholds income tax from employees but does not report it on time (or pay it on time) because those tabulations are based solely on timely filed employment tax returns. Therefore, because the individual employee is assumed to report the tax liability and withholding on time, any amount of withheld income tax the employer paid late in connection with a late employment tax return must also be included in the individual income tax underpayment gap. These amounts are tabulated separately from the IRS Business Master File through a recent date. It is possible that additional late payments could be made for the tax year in question after that date, in which case the individual income tax underpayment tax gap would be understated by that amount. This is the only exception to the general rule that the underpayment tax gap can be observed.

Finally, the self-employment tax underpayment tax gap is separated from the individual income tax underpayment tax gap tabulations even though they are both reported on Form 1040. The self-employment tax portion was prorated from the total by assuming that the income and self-employment underpayment tax gaps are proportional to the corresponding total individual income tax and self-employment tax liabilities.

4.4 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, a payment may be remitted when filing a return just before an extended filing deadline[18] or when filing an amended return. The general approach to estimating enforced and other late payments for a particular tax year is to add actual late payments made to date to a projection of what will likely be paid in the future for that tax year. The details of the projection methods are described in detail in a forthcoming technical report.

All late payments are tabulated from IRS administrative data. These tabulations distinguish payments made after the due date from those paid on time. These tabulations are used to estimate enforced and other late payment for all taxes except the corporation income tax.

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 IRS 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 the payments are actually made before the original due date; so, they are enforced payments paid "on time." Using TERC assumes that corporations do not make any nonenforced late payments, which would not be captured by TERC.

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

5 Tax Gap Projections for Tax Years 2017-2019

This report includes average annual tax gap projections for the TY 2017-2019 timeframe. These figures are called projections instead of estimates to highlight the differences between the projection and estimation methodologies. The methods and data are different enough that the numbers have different interpretations. The differences vary by tax gap component and reflect the timing in which compliance data become available for use in estimation. For the largest components of the tax gap, compliance data for the projection years are not yet available. The projections for those components were developed to capture the growth in the reported tax or the reported amount of each line item, under assumptions of constant compliance. Thus, the projection figures reflect the level of the tax gap assuming compliance behavior has not changed from prior years. The TY 2014-2016 estimates for those components, however, are based on actual compliance data for the years of the estimates and are a measurement of compliance behavior[19]. The projections will be updated as additional compliance data become available. For certain small tax gap components for which data from TY 2017-2019 are available, the projections adopt mostly identical methodologies to those used for TY 2014-2016.

The primary focus of tax gap estimation is to measure compliance behavior as manifested in tax paid voluntarily and timely. To be most informative—and consistent with tax gap concepts and objectives--the methodology for measuring the tax gap should be grounded in data on actual compliance behavior for the years being estimated. For the tax gap estimates, with the exception of the large corporation income tax and the FICA and FUTA tax underreporting tax gap estimates, the estimation methodologies for all major tax gap components are based on data for the tax years being estimated.

The extent of the differences between the tax gap projection methodologies and the tax gap estimation methodologies varies by tax gap component. For the small corporation income tax underreporting tax gap and the estate tax underreporting tax gap, the projections are developed by applying the TY 2014-2016 estimated overall compliance rates for those components to the associated reported tax for the TY 2017-2019 timeframe. Thus, the projections reflect a tax gap under the assumption that overall compliance rates for TY 2017-2019 are the same as those estimated for TY 2014-2016. For the individual income tax underreporting tax gap and self-employment tax underreporting tax gap, the projections are done at the line-item level and then summed under the assumption that the estimated compliance rates and average marginal tax rates at the line-item level are applicable to the associated TY 2017-2019 line items. The result of the assumptions is that the tax gap for a line item grows at the same rate as the growth in the reported amount for the line item.

The TY 2014-2016 FICA and FUTA underreporting tax gap estimates themselves are projections based on applying the compliance rates from the NRP TY 2008-2010 study to reported data for TY 2014-2016. The TY 2017-2019 projections use the same compliance rates applied to TY 2017-2019 reported data. The projection for the large corporation income tax underreporting tax gap uses the estimated compliance rate developed for the TY 2014-2016 estimate. This rate is applied to reported tax data for TY 2014-2016 and for TY 2017-2019 to develop the estimate and projection. Thus, the large corporation income tax underreporting tax gap estimate and projection use the same compliance rate assumption.

The individual income tax and self-employment tax nonfiling tax gap projections use a different method than the one used for the TY 2014-2016 timeframe. Specifically, the projections use the “Administrative Data Method” instead of the “Census Method” because Census data were not available for all of the projected years. However, the Administrative Data Method has consistently provided similar estimates to

[19] The exception is the large corporation underreporting tax gap for which sufficiently complete examination data are not yet available.

the Census Method over time. The estate tax nonfiling tax gap projection uses the same methodology that was used for the TY 2014-2016 tax gap estimate.

The enforced and other late payments projections use the same approach as the TY 2014-2016 tax gap estimates but the projections have fewer years of actual payments than the estimates and so they include more years that are forecasts of eventual payments.

Table 7 reports the projections for the TY 2017-2019 timeframe. The average annual gross tax gap is projected to be $540 billion. The associated VCR is projected to be 85.1 percent. The projection of enforced and other late payments is $70 billion, which yields a net tax gap projection of $470 billion. The associated NCR projection is 87.0 percent. The gross tax gap nonfiling, underreporting, and underpayment component projections for TY 2017-2019 timeframe are $41 billion, $433 billion, and $66 billion respectively.

Table 7. Tax Gap Projections for Tax Year 2017-2019 by Component[1]

[Money amounts are in billions of dollars]

Tax Gap Component	TY 2017-2019[1]	Share of Gross Tax Gap
Estimated Total True Tax	**$3,621**	
Gross Tax Gap	**$540**	**100%**
Voluntary Compliance Rate	***85.1%***	
Enforced and Other Late Payments	**$70**	
Net Tax Gap	**$470**	
Net Compliance Rate	***87.0%***	
Nonfiling Tax Gap	**$41**	**8%**
Individual Income Tax	$33	6%
Self-Employment Tax	$7	1%
Estate Tax	[3]	[2]
Underreporting Tax Gap	**$433**	**80%**
Individual Income Tax	**$304**	**56%**
Corporation Income Tax	**$37**	**7%**
Small Corporations (assets under $10M)	$15	3%
Large Corporations (assets of $10M or more)	$22	4%
Employment Tax	**$91**	**17%**
Self-Employment Tax	$58	11%
Uncollected Social Security and Medicare Tax	[3]	[2]
FICA and FUTA Tax	$32	6%
Estate Tax	**$1**	**[2]**
Underpayment Tax Gap	**$66**	**12%**
Individual Income Tax	$53	10%
Corporation Income Tax	$6	1%
Employment Tax	$4	1%
Estate Tax	$3	1%
Excise Tax	[3]	[2]

[1] The projections are the annual averages for the Tax Year 2017-2019 timeframe.

[2] Less than 0.5 percent.

[3] Less than $0.5 billion.

Detail may not add to total due to rounding.

Table 8 on the following page reports the gross tax gap, enforced and other late payments, and net tax gap by type of tax. The gross tax gap projection for individual income tax is $390 billion; for corporation income tax it is $43 billion; for employment tax it is $102 billion; and for estate tax combined it is $4 billion.

Table 8. Tax Gap Projections for Tax Year 2017-2019 by Type of Tax[1]

[Money amounts are in billions of dollars]

Type of Tax	Gross Tax Gap	Enforced & Other Late Payments	Net Tax Gap
Total	**$540**	**$70**	**$470**
Individual Income Tax	$390	$51	$339
Corporation Income Tax	$43	$9	$34
Employment Tax	$102	$7	$95
Estate Tax	$4	$3	$1

[1] The projections are the annual averages for the Tax Year 2017-2019 timeframe.

Detail may not add to total due to rounding.

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