

# What Made Receipts Boom and When Will They Go Bust?

***Abstract** - Federal revenues surged in the past three fiscal years, with receipts growing much faster than the economy and nearly all of the growth in the revenue due to individual income tax receipts. The 1994–7 increase in personal income tax liabilities relative to gross domestic product (GDP) resulted from taxable incomes growing faster than GDP and a significant increase in the effective tax rate on taxable income, each accounting for about half of the increase in liabilities relative to GDP. Over the next ten years, offsetting effects from these phenomena should prevent liabilities from growing further as a percent of GDP.*

## INTRODUCTION

Despite tax cuts enacted in 1997, federal revenues for fiscal year 1998 increased to 20.5 percent of gross domestic product (GDP), a level only exceeded once, at the height of World War II in 1944. This postwar record level of taxes as a percent of GDP, the result of five years of revenue growth outstripping GDP growth, contributed significantly to the emergence of a large surplus in the government's accounts.

Much of this growth has come as a surprise. The Congressional Budget Office (CBO), along with other professional forecasters of the government's accounts, substantially underestimated receipts for fiscal years 1996, 1997, and 1998.<sup>1</sup> Part of this underestimate was related to aggregate economic performance. Output in the economy reached what most economists thought was capacity in 1996. Virtually all forecasters expected inflation to accelerate and the Federal Reserve to bring the expansion to a halt in order to arrest it. But the expansion continues. The Fed, rather than achieving its ideal—a soft landing—has actually done better. It has managed not to land at all—with no adverse effects. The economy has produced more than was previously believed to be its capacity. And unemployment has been driven well below what was thought to be the nonaccelerating inflation rate of unemployment, with no acceleration of inflation yet in sight.

The cyclical performance of the economy explains only a small part of the surge in revenues, as the ratio of revenue to GDP demonstrates. Even if revenue forecasters had correctly predicted overall economic performance, they still would

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<sup>1</sup> As of January for the fiscal year in progress.

have substantially underestimated revenues. For example, fiscal year 1998 revenues exceeded by \$57 billion the CBO's revenue projections made at the beginning of the 1998 calendar year. Yet only about \$7 billion of this error was due to the economy outperforming CBO's projection.<sup>2</sup> The bulk of the error was in calculating how much in taxes would be collected based on the projected level of economic activity. Receipts have surged for reasons well beyond a failure to predict overall macroeconomic growth. Even if revenue forecasters had bought into so-called "new paradigm" thinking about the economy, and forecast noninflationary growth and low unemployment rates, they would have still received a revenue surprise.

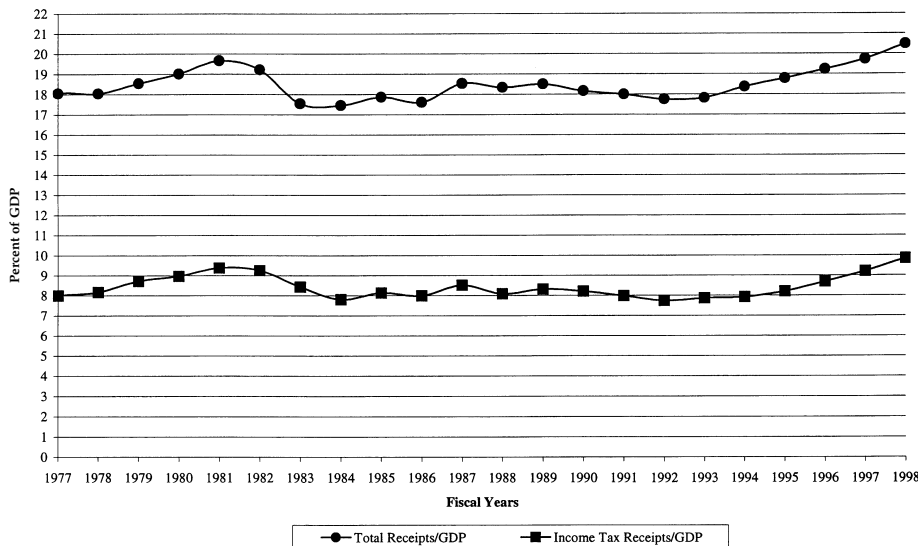
Virtually all of the CBO's underestimate of receipts resulted from its projections of the individual income tax. For example, individual income tax receipts for fiscal year 1998 exceeded the January forecast by \$60 billion. Small overestimates of other

tax collections slightly reduced the total shortfall in the projections to \$57 billion.

Looked at another way, from 1994 to 1998, total receipts relative to GDP rose 2.1 percentage points, from 18.4 percent of GDP to 20.5 percent. At the same time, individual income tax receipts increased 2 percentage points, from 7.9 percent of GDP to 9.9 percent. The recent period has been an unusual one: revenues as a percent of GDP increased steadily (Figure 1), even in the absence of any significant change in tax law. Clearly, understanding the behavior of individual income tax receipts is critical to understanding the surge in federal revenues.

A simplistic interpretation of past trends shown in Figure 1 might lead one to assume that the recent increase in the share of GDP going to taxes must reverse itself, as it has in earlier episodes. But previous increases have often been reversed not by natural economic forces, but by deliberate tax policy, the result of political forces set

Figure 1. Individual and Total Receipts as a Share of GDP Fiscal Years 1977-98



<sup>2</sup> This analysis assumes that the current measures of personal income will not be revised. If they are revised upward, more of the error may be attributable to "economic" factors.

in motion by the rising tax “burden.” To say anything about when or whether the revenue boom will end without legislative action requires identifying its sources.

### SOURCES OF INDIVIDUAL INCOME TAX GROWTH 1994–7

With a lag, we are able to examine the proximate sources of the recent surge in revenues. The Treasury provides a sample of tax returns that permits us to examine the reasons why households paid the taxes they did—at least within the classification framework of the income tax itself. The detailed information we can derive from the return sample is on a calendar year basis—the tax year used by most filers to calculate their tax liability. This is in contrast to the fiscal year figures given above.

After estimating tax liabilities from a set of economic projections, it is necessary to distribute the payment of the liabilities over time to get fiscal year receipt projections. While taxpayers determine their tax liability based on a calendar year, their payments are almost always distributed across two fiscal years. The Treasury receives withholding taxes contemporaneously with the income giving rise to them. But even withholding is spread across two fiscal years, because the fiscal year begins in October. Estimated taxes follow a similar pattern; they are received quarterly, with one quarter paid in January, after the tax year to which they apply. Both final payments and refunds of overwithheld taxes occur after the end of the tax year. And some collections occur long after they are due, so that a given fiscal year’s receipts include a small amount of taxes from a number of earlier tax years.

Consequently, the amounts examined here do not correspond to tax receipts in the budget. First, they are for calendar years. Second, they are tax liabilities that taxpayers calculate for those years, not

receipts collected.<sup>3</sup> Third, the sample does not include returns filed by fiduciaries for estates and trusts. In addition, our examination cannot include 1998. Even though we know the amount of income tax collected in 1998, most tax forms for tax year 1998 have only just been filed and await tabulation. Many of the taxpayers who are most critical to our estimates—high-income taxpayers—have not even filed yet, because they typically receive extensions.

The basic pattern of liabilities, however, mirrors that of receipts. As shown in Figure 2, liabilities as a percentage of GDP have been rising. Our estimates indicate that this trend has continued into tax year 1998. As the final two points in the figure demonstrate, our calculations indicate that 1998 individual income tax liability would have been an even higher proportion of GDP if not for the enactment of the Taxpayer Relief Act of 1997.

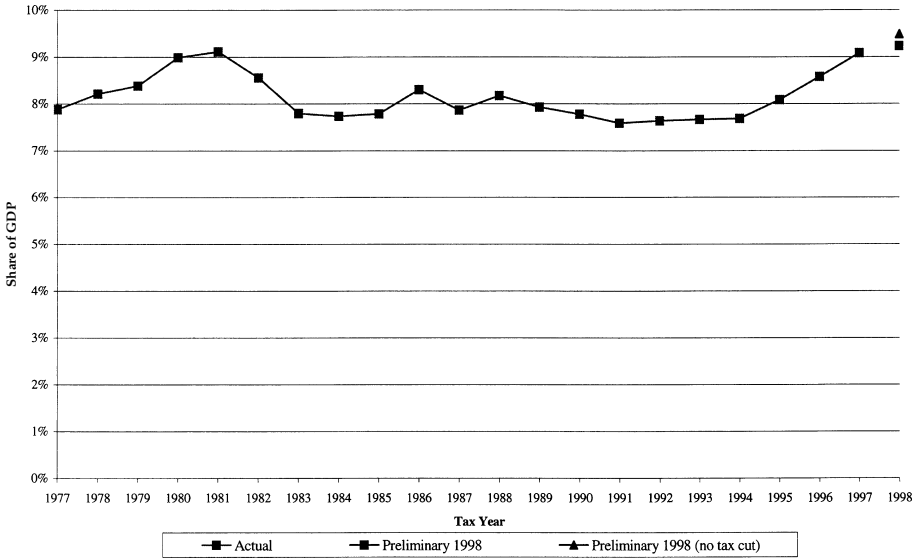
We focus on individual income tax liability for tax years 1995, 1996, and 1997, years that exhibited rapid growth in receipts. Using 1994 as the base for comparison, we eliminate the role of the 1993 tax act in boosting liabilities and in prompting taxpayers to shift income and deductions between years. We begin with a “naive” forecast that assumes that the ratio of income tax liabilities to GDP stays constant, and then ask why the ratio increased. This approach does not decompose forecast error. Neither the CBO, Office of Management and Budget (OMB), nor other budget forecasters project a constant tax-to-GDP ratio. Our question here is why receipts boomed, not why so many revenue forecasters missed the boom.

Between 1994 and 1997, individual income tax liability increased from 7.69 percent of GDP to 9.09 percent (Table 1). Had 1997 tax liability remained 7.69 percent of GDP, it would have been \$623.4 billion rather than the \$736.9 billion that was ac-

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<sup>3</sup> Later audits may generate additional liabilities that are not included here.

Figure 2. Individual Income Tax Liabilities as a Share of GDP



Source: Statistics of Income and BEA. 1997 liability data are preliminary. 1998 data are very preliminary.

tually incurred. The difference of \$113.3 billion can be broken down into general categories that roughly correspond to the entries on a federal tax form.

We decompose the \$113.3 billion difference into four categories: the difference in the growth rates of GDP and taxable personal income, differences in the growth rates of taxable personal income and adjusted gross income, differences in the growth rate of AGI and itemized deductions, and changes in the effective tax rate. Some of these categories are in turn broken down into smaller components.

*GDP and Taxable Personal Income Grow at Different Rates*

Taxable income for the purposes of the individual income tax does not include depreciation, indirect business taxes, or retained corporate profits. Taxable personal income (TPY) consists of dividends, interest, wages and salaries, rent, and pro-

prietors' income, all of which are measures in the National Income and Product Accounts (NIPA). Some of the components of TPY also differ significantly from similar-sounding entities in National Income. For example, the wages and salaries component does not include nontaxable fringes and other supplements that are part of "compensation of employees," and interest income is personal interest rather than "net interest."

If taxable personal income grows more rapidly than GDP, the individual income tax base grows more rapidly, and all other things equal, income taxes grow faster than the economy. TPY can grow faster than GDP, for example, if the nontaxable component of employee compensation grew more slowly than the taxable portion or if indirect business taxes grew more slowly than GDP. Over the period 1994-7, taxable personal income increased faster than GDP, accounting for \$16.9 billion of the \$113.3 billion in additional taxes.

**TABLE 1**  
SOURCES OF THE GROWTH IN THE RATIO OF INCOME TAX LIABILITY TO GDP  
1994-7

Source	\$Billions	Percent of GDP
1997 GDP	8110.9	100.00
1997 tax liability	736.9	9.09
Naive estimate of liability in 1997 (based on the 1994 tax share of GDP)	623.6	7.69
Difference	113.3	1.40
Growth of TPY in excess of GDP	16.9	0.21
Growth of AGI in excess of TPY	45.4	0.56
Capital gains in excess of GDP growth	34.2	0.42
Growth of IRA/401(k)/pension/Social Security in excess of TPY	4.7	0.06
Growth of other components of AGI In excess of TPY	6.5	0.08
Growth of deductions slower than AGI	1.4	0.02
Higher effective tax rate	49.7	0.61
Effect of overall real growth	19.6	0.24
Growth of highly taxed sources of income	7.1	0.09
Changing distribution of income and residual	23.0	0.28

Source: Calculations by the authors.

*TPY and AGI Grow at Different Rates*

In computing taxes, income is adjusted for a number of items. Some components of AGI do not directly depend on the current level of economic activity and therefore are not part of NIPA-derived income. Capital gains realizations create tax liabilities that result from past asset price changes that have been deferred. These asset price changes in turn reflect both past activity and anticipation of future performance. Various retirement arrangements, such as Individual Retirement Accounts (IRAs), 401(k)s, and pensions, reduce the taxable income base when contributions are made and in-

crease the base later in the form of distributions and benefits. Social Security benefits are not part of TPY, but a portion of them is included in computing taxes. There are also a variety of minor adjustments.

Together, growth in the items constituting the difference between TPY and AGI accounts for \$45.4 billion of the \$113.3 billion difference between the naive estimate and actual tax liability. Capital gains realizations grew substantially faster than GDP over the three years in question, constituting \$34 billion of the excess (even with the reduction in capital gains tax rates in 1997).<sup>4</sup> Growth of pension income,

<sup>4</sup> The contribution of capital gains realizations is measured relative to GDP growth. The other components in this category are measured relative to TPY growth.

IRA and 401(k) distributions, and Social Security benefits faster than TPY accounted for \$4.7 billion of the extra taxes. All other items between TPY and AGI on net grew faster (or, to the extent that they are net subtractions from income, grew more slowly) than TPY as well, adding another \$6.5 billion to total revenues to total liabilities.

The income to which tax rates are actually applied grows at a different rate than AGI, principally because of itemized deductions. Between 1994 and 1997, itemized deductions grew slower than AGI, accounting for an extra \$1.4 billion in tax liability.

Differential growth rates in GDP, TPY, AGI, and itemized deductions account for more than half of the \$113.3 billion revenue difference between actual liabilities and the naive estimate. What remains, \$49.7 billion, may be viewed as resulting from the increase in the average effective tax rate. This can be further decomposed into increases due to higher real incomes, shifts in income to more highly taxed sources, and changes in the distribution of income within sources.

The most obvious reason for the increase in the effective tax rate is the predictable increase that results from higher real incomes being taxed at higher rates as more taxpayers fall into higher marginal tax brackets, what some have referred to as "real bracket creep." Our estimates indicate that \$19.6 billion of the extra tax liability is a result of this phenomenon.

In addition, sources of income that are typically taxed at higher rates grew faster than other forms of taxable income. That is, some of the rise in the effective tax rate occurred as wages, interest, dividend, schedule C, partnership, S corporation, and other kinds of income changed their proportions within overall income.

Because some of the components that are taxed at higher average rates grew faster than other components, \$7.1 billion in tax liability was added. The most significant of these was the income from partnerships and S corporations, which on average are taxed under the income tax at about a 24 to 25 percent rate compared with wages, which on average are taxed at about a 12 to 13 percent rate.<sup>5</sup> Over the 1994–7 period, the faster growth of partnership and S corporation income relative to wage growth accounted for almost all of this increase in tax liability.

The remainder, \$23 billion, is presumably mostly a "within-source" distribution story. The more unevenly income is distributed, the more taxes a given level of total income will generate. The 1993 income tax rate increases made the revenue forecast more sensitive to the recent income gains of upper-income taxpayers. Because higher-income taxpayers face higher marginal rates, the increase in taxes they incur from additional income is greater than that experienced by lower-income taxpayers. If additions to total income are more skewed than the previous year's income, more tax liability will be incurred from a given increase in total income than if the distribution remained the same. This distribution effect is solely from shifts in income within categories of income sources. The shifts across sources were already computed above.

Note that all the effects are in the same direction: GDP to TPY, TPY to AGI, AGI to the taxable base, and then the effective tax rate. And where each category is broken down, each subcategory also is in the same direction. None of the effects is offsetting. The taxonomy was not deliberately chosen to produce this effect. The breakdown was chosen before we knew the components would yield this pattern. And while this analysis is not about the

<sup>5</sup> These rates are derived by allocating taxes proportionately according to shares of income. An alternative approach would be to stack the incomes first or last.

source of forecast errors, it suggests a major contributing factor: everything is going in the same direction.

**SOURCES OF INDIVIDUAL INCOME TAX GROWTH BY YEAR**

Table 2 breaks down the same components year by year for the three years examined. Decomposed this way, there is a difference of \$28.9, \$39.6, and \$44.9 billion to explain in tax years 1995, 1996, and 1997, respectively. Different components played different roles each year.

For example, capital gains realizations had their biggest impact in tax year 1996, when they were responsible for \$20 billion, or half, of the \$40 billion total difference between actual receipts and a “naive” forecast based on the previous year’s tax liability to GDP ratio. In 1995

and 1997, gains accounted for only about 20 percent of the total. The differential growth of TPY played a similar role in 1995 and 1996 (about 20 percent). It accounted for only seven percent of the 1997 difference.

The effect of rapid growth of highly taxed sources is almost all in 1997, accounting for about 14 percent of that year’s differential and nearly negligible portions of the differentials in 1995 and 1996. The nonretirement, noncapital gains components of AGI make substantially similar contributions of about ten percent in 1995 and 1997. Yet in 1996, their contribution is negative. And the remainder/distribution effect varies significantly year to year. It is largest in 1997, 26 percent of the year’s differential. Though smaller in the other two years, it is still significant in each.

**TABLE 2**  
SOURCES OF THE GROWTH IN THE RATIO OF INCOME TAX LIABILITY TO GDP  
1994–7

Source	1994–5	1995–6	1996–7
Actual tax liability	587.8	657.5	736.9
Naive estimate of liability	558.9	617.9	692.0
Difference	28.9	39.6	44.9
Growth of TPY in excess of GDP	6.3	7.4	3.2
Growth of AGI in excess of TPY	10.3	20.3	14.9
Capital gains in excess of GDP growth	5.9	20.3	8.1
Growth of IRA/401(k)/pension/Social Security in excess of TPY	1.1	1.5	2.1
Growth of other components of AGI In excess of TPY	3.3	-1.5	4.7
Growth of deductions slower than AGI	0.6	-1.0	1.8
Higher effective tax rate	11.7	12.9	25.1
Effect of overall real growth	5.5	7.3	6.9
Growth of highly taxed sources of income	0.3	0.5	6.3
Changing distribution of income and residual	5.9	5.1	11.9

Source: Calculations by the authors.

The retirement income effects are about the same percentage of the total in each year. And in terms of the effective tax rate, the real growth effect is relatively steady across each of the three years, as one might expect. Itemized deductions, though making a negative contribution in 1996, account for only a small part of the story in each year, never more than four percent.

Note that only two of these identified components were negative in any year, showing how little a role offsetting effects had in the whole story.

### WHEN WILL RECEIPTS GO BUST?

As shown in Figure 2, our best estimate is that individual income tax liabilities continued to grow as a percent of GDP in 1998, despite the tax cuts that became effective that year. But we must await the 1998 data to see the causes of the further growth. The ratio of individual income tax liability to GDP should level off in 1999 and decline for several years before rising again over the longer term. In short, we expect that liabilities will neither continue to grow as a share of GDP, as they have in the last few years, nor return to the levels we had before the most recent boom.<sup>6</sup> This expectation reflects offsetting factors. Some components, such as a decline in the growth of capital gains realizations, imply that liabilities will grow more slowly than GDP. Others, such as overall real income growth and increases in taxable retirement income, imply growth of tax liabilities faster than GDP.

Presumably, taxable personal income cannot grow faster than GDP growth in the long run. However, the recent increase in TPY as a share of GDP will not necessarily reverse itself. If the trend does continue, it may call into question the procedure of building up a macroforecast on a product basis and allocating the result to

income. Instead, it may make more sense to build up a macroprojection from an income standpoint from the outset.

The degree to which AGI can continue growing faster than TPY depends primarily on the behavior of asset prices. Capital gains realizations spring from accruals, and accruals are being driven to new heights by the stock market. Stock market behavior also swells retirement accounts, increasing the amount to be distributed and possibly reducing the tax-exempt amounts that individuals choose to contribute out of current income.

Few analysts expect the stock market to continue to grow at the pace of the past several years. If it slows to a more accustomed growth rate, tax liabilities resulting from capital gains realizations should tend to decline as a share of GDP, even if the stock market does not actually decline. Current realizations reduce the amount of accruals from which future gains will be realized. Consequently, if accruals slow with a slowing in the market, growth in realizations should also slow. In addition, moderate growth in the market overall means that there will be more assets with falling prices, which taxpayers can use to offset taxable gains, reducing further the tax liability resulting from gains.

The other source of fast AGI growth that has been influenced by stock market performance—retirement income—should continue to outpace TPY. The accumulation of past stock market gains will increase future distributions from individual retirement accounts, while the retirement of the baby boomers will increase the number of individuals taking distributions.

The effective tax rate on AGI will continue to grow as real incomes rise. A significant part of the increase in the effective rate in recent years has been from real bracket creep, and it will increase the li-

<sup>6</sup> The ratio rises further out into the ten-year forecast because real growth will increase the effective tax rate, the alternative minimum tax (AMT) will affect more taxpayers, and more taxpayers will take distributions from retirement accounts, bringing deferred income back into the taxable income stream.

ability share of GDP as long as there is some real growth in incomes. Real growth may not maintain the pace of the last few years, but only a recession will reverse the increase in the tax rate already brought about by real income growth (assuming no change in the tax laws).

The underlying causes of the remaining increase in the effective tax rate—an increased share of income of upper-income taxpayers—are unknown to us. Some of these gains may be associated with the booming stock market to the extent that stock options are part of compensation, bonuses are tied to stock market performance, and the boom in partnership and S corporation income comes from the earnings of financial firms. These gains would easily reverse if the market stops rising or the economy enters a slowdown. Whether that is a permanent or temporary reversal, however, depends on whether increasing inequality over the past two decades continues.

Much of the problem in determining when the growth in receipts will go bust stems from the fact that we can only identify the proximate and not the underlying sources of the surge in revenue. For example, we cannot, from the tax forms filed, distinguish wage and salary income that has come in the form of bonuses and stock options (and therefore may be concentrated among highly taxed individuals); nor can we identify the reasons why individuals might realize more capital gains than in the past.

Note also how many of the phenomena involved are not part of a macroeconomic forecast. Only two of the components of Tables 1 and 2 above fall out of a standard macroeconomic forecast: the growth of TPY and the increase in the effective tax rate that results from real income growth.

Thus, they are the only items contributing to the change in the tax-to-GDP ratio that could have been predicted from a perfect macroeconomic forecast.

Even a good macroeconomic forecast may not capture all of the effect of the current business cycle expansion on receipts. Because this expansion has run longer than usual, and has boosted employment and output well beyond what is typically characteristic of a cyclical peak, it may exhibit other exaggerated attributes in terms of concentration of income and sources of income. If that's the case, simple tax-to-GDP ratios do not wash out all cyclical effects.

As a final observation, we note that the boom may already have started to unwind. Corporate profits, which have been strong through much of the revenue boom, have slowed significantly. It seems likely that slower growth in bonuses and stock market gains will follow.

### Acknowledgments

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