A Comparison of Income Concepts: IRS Statistics of Income, Census Current Population Survey, and BLS Consumer Expenditure Survey

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Several Federal Government agencies produce statistics on individual and household income. Because of the differing purposes to which their data will be put, agencies use different definitions for income (income concepts), as well as different reporting units, sample designs, collection modes, and processing rules. Data users are faced with an array of choices, often without much help to sort out which data series best meets their needs or much guidance to reconcile results based on different sources of data.

In order to help users, a number of papers have been written comparing the Census Bureau's Current Population Survey (CPS) Money Income and Survey of Income and Program Participation concepts, the Bureau of Labor Statistics (BLS) Consumer Expenditure Survey (CE) concept, and the Bureau of Economic Analysis Personal Income concept [1-3]. This paper extends that body of work by first describing the Adjusted Gross Income (AGI) concept, which is used most frequently to define individual income by the Internal Revenue Service (IRS) Statistics of Income (SOI) Division. That description is followed by an explanation of the most important differences between the AGI concept and the definitions of income used in BLS's Consumer Expenditure Survey and the Census Bureau's Current Population Survey. Note that this is a discussion of income concepts only; no attempt is made in this paper to discuss other causes of differences between estimates of income.

The Census Bureau conducts the CPS for BLS. It states that the data are "the primary source of information on the labor force characteristics of the U.S. population. CPS data are [intended for use] by Government policymakers and legislators as important indicators of our nation's economic situation, and for planning and evaluating many Government programs. They are also used by the press, students, academics, and the general public. … Supplemental questions on … income … are often added to the questionnaire." The CPS questionnaire is administered at the household level, with information being collected for each person living in the household over age 15 [4].

BLS conducts the CE. It is the "basic source of data for revising the items and weights in the market basket of consumer purchases to be priced for the Consumer Price Index." It consists of two components, a quarterly interview survey and a weekly diary survey. The CE targets the entire noninstitutionalized population of the United States [5].

SOI Individual taxpayer data are an administrative data set. The data are collected from a sample of Forms 1040 filed by individual taxpayers [6]. The target population is all individuals required to file a tax return.

The AGI concept is appropriate to administration of the tax laws and thus varies quite a bit from the CPS and CE concepts. In order to make a discussion of those differences tractable and useful to readers, the authors have chosen to discuss those differences of greatest practical significance in comparing the data series, knowing that this will leave out many minor differences.

▶ The Adjusted Gross Income Concept

This section describes the AGI concept used by IRS's SOI Division. This description includes highlights of changes to the concept over the last 16 years. AGI is the difference between Total Income and Adjustments to Income. A deficit (negative AGI) occurs if Adjustments to Income exceed Total Income.

Total Income includes the following:

Wages, salaries, and tips include compensation for services, including wages, salaries, fees, commissions, tips, taxable fringe benefits, and similar items. AGI does not include money designated for a health flexible spending or health reimbursement arrangement. Similarly, elective contributions and employer matching amounts

for retirement plans, such as 401(k)'s, tax-sheltered annuities, and the Federal Thrift Savings Plan, are not included in salaries and wages for tax purposes. Also excluded from AGI are most forms of armed forces pay earned while in a combat zone or in a hospital recovering from illness or injury suffered in a combat zone. Note that there is a limited exclusion of qualified foreign-earned income.

Taxable interest consists of interest from bonds, savings accounts and certificates of deposit, interest accrued on unpaid amounts due to the taxpayer, and interest on privately held mortgages. Tax-exempt interest, from sources such as tax-free municipal bonds, IRA's, and 401(k) accounts, is excluded from AGI.

Dividends and capital gain distributions do not include the one-time exclusion of part or all of the gain from the sale of principal residence by an individual 55 years of age or older. The words "one-time exclusion of" were deleted in Tax Years 1990 and 1991, brought back in 1992 to 1996, and then incorporated into the current wording, "Exclusion of part or all of the gain from the sale of principal residence up to $250,000 ($500,000 on joint returns)," in Tax Year 1997 to the present time.

Refunds of State and local income taxes claimed as itemized deductions in previous years were first included in Tax Year 1990.

Alimony and separate maintenance payments are part of AGI, but child support payments (as IRS defines them) are not.

Net income derived from a business, profession, or farm helps make up AGI. Note that the business must be a "for profit" enterprise. Generation of revenue from a hobby does not qualify an individual to claim all of his or her expenses associated with that hobby.

Net gain from the sale of capital assets or of business property is included in AGI.

Annuities, pensions, individual retirement arrangement (IRA) distributions, and Tier II railroad retirement, reduced by their cost basis, are part of AGI [7].

Rents and royalties, along with **net income from estates and trusts,** help make up AGI.

Partnerships and subchapter S corporations are not taxable entities; therefore, income from these sources is distributed to the partners or owners and is included in individual AGI.

Unemployment compensation is part of AGI, although compensation paid by a union is reduced by the amount of any dues paid.

Taxable amounts of Social Security contribute to AGI. Since the inception of Social Security, railroad employees have had a separate, similar retirement system. **Taxable Tier 1 railroad retirement payments** were added in Tax Year 1990.

Taxable distributions from a Coverdell education savings account were added to AGI in Tax Year 2000.

Among the items of income included in AGI under "Other Income" are **prizes, awards, and gambling winnings, jury duty fees** (started in Tax Year 2000), **amounts received that were claimed as a deduction or credit in a prior year, bartering income, Alaska permanent fund dividends** (started in Tax Year 2000), and **qualified State tuition program earnings** (started in Tax Year 2000).

Statutory adjustments (lines 23 through 32, Form 1040 for Tax Year 2003) are amounts that are subtracted from Total Income to arrive at AGI (line 34, Form 1040 for Tax Year 2003). These include the following:

Reimbursed employee business expenses that were included in reported income (deleted for Tax Year 1990) are used to reduce Total Income.

With some limitations, elementary and secondary educators could deduct up to $250 in **Educator expenses** (starting in Tax Year 2002) from Total Income for items purchased out-of-pocket for classroom use.

Contributions to self-employed retirement plans (Keogh or simplified employee pension) and **certain**

contributions to IRA's can be deducted when computing AGI.

Up to $2,500 in **Student loan interest** (started in Tax Year 1998), paid on loans used for tuition, transportation, room and board, books, supplies, and equipment, can be used to reduce AGI by taxpayers with modified AGI under limits based on filing status.

Up to $4,000 in **Tuition and fees** (started in Tax Year 2002) may be deducted in calculating AGI.

Archer medical savings accounts (started in Tax Year 1997, "Archer" added in TY 2002) are used by employees of small businesses and self-employed persons covered by a high-deductible health plan to save money for paying medical expenses. Contributions to such a plan can be used to reduce AGI.

Moving expenses (started in Tax Year 1994) associated with a move that is closely related to work and covers enough distance may be deducted in calculating AGI.

One-half of self-employment tax (started in Tax Year 1990) can be used to reduce AGI.

Self-employed health insurance expenses may be deducted in computing AGI.

Forfeited interest and penalties incurred by persons who made premature withdrawals of funds from time savings accounts can be used to reduce income in computing AGI.

Alimony payments are deductible for AGI computation purposes. Note that alimony received is considered income.

Forestation or reforestation expenses of up to $10,000 can be used by owners of qualified timber property to reduce AGI.

The **foreign housing exclusion** is available to reduce AGI for those living abroad whose housing expenses are paid out of amounts provided by their employers.

Repayments of supplemental unemployment compensation from an employer-paid-for fund may be deducted when calculating AGI.

Certain expenses of qualified performing artists, in particular those working for more than one employer and with AGI less than $16,000 before expenses are deducted, may reduce their AGI by the amount of those expenses, provided they are more than 10 percent of AGI.

Amount of jury duty pay reported on line 21, Form 1040, that was repaid to employers (started in Tax Year 1991).

The **Deduction for clean-fuel vehicles** (started in Tax Year 1999) allows the taxpayer to deduct up to $2,000 of the cost of a designated clean-fuel vehicle from AGI.

Employee business expenses of fee-basis State or local government officials (started in Tax Year 1999).

SOI uses AGI as its most common measure of income as can be seen in its publications. Many of the components broken out by SOI are then further analyzed by also breaking them out by various sizes of AGI. This is done to compare tax returns to different AGI classes so that economists can easily see counts and money amounts and break out components of the tax return.

► Comparison of Adjusted Gross Income and the Consumer Expenditure Survey Income Concept

A description of the Consumer Expenditure Survey reads, "Income is the combined income of all consumer unit members (14 years of age or over) during the 12 months preceding the interview." The income concept includes the following:

Wages and salaries include total money earnings for all consumer unit members (14 years of age and over) from all jobs, including civilian wages and salaries; armed forces pay and allowances; piece-rate payments; commissions; tips; National Guard or Reserve pay (received for training periods); and cash bonuses

before deductions for taxes, pensions, and union dues. This corresponds to Wages, Salaries, and Tips on Form 1040. Portions of income that are nontaxable are the main source of differences between the CE and AGI concepts. AGI does not include money designated for a health flexible spending or health reimbursement arrangement. Also excluded from AGI are most forms of armed forces pay earned while in a combat zone or in a hospital recovering from illness or injury suffered in a combat zone. Note that identifiable amounts as classified under the definition of Salaries and Wages, which may have been reported by taxpayers as "other income," are treated as salaries and wages for the statistics where possible.

Self-employment income includes net business and farm income, which consists of net income (gross receipts minus operating expenses) from a profession or unincorporated business or from the operation of a farm by an owner, tenant, or sharecropper. If the business or farm is a partnership, only an appropriate share of net income is recorded. Losses are also recorded. This corresponds with net income derived from a business, profession, or farm on the 1040. Rental income taken as crop shares is counted as rental income (line17) in AGI, not farm income (line 18).

Social Security, private, and Government retirement includes the following: (1) payments by the Federal Government made under retirement, survivors', and disability insurance programs to retired persons, dependents of deceased insured workers, or disabled workers and (2) private pensions or retirement benefits received by retired persons (or their survivors), either directly or through an insurance company. AGI includes only the taxable portion of Social Security benefits in its AGI computation. At least 15 percent of benefits are not taxable; if income is under $34,000 ($44,000 for a married couple filing jointly) and the taxpayer is not married filing separately and living with a spouse, at least 50 percent is not taxable. The CE concept includes income from "companies or unions, Federal Government (Civil Service), military, State or local governments, railroad retirement, annuities or paid-up insurance policies, individual retirement accounts (IRA's), Keogh, or 401(k) payments." Note that Tier I railroad retirement is treated like Social Security for tax purposes. Also, if an employee paid part of the cost of a pension, then payments that represent the return of his or her cost are not included in income.

Interest, dividends, rental income, and other property income include interest income on savings or bonds; payments made by a corporation to its stockholders; periodic receipts from estates or trust funds; net income or loss from the rental of property, real estate, or farms; and net income or loss from roomers or boarders. AGI does not include interest on certain State and municipal bonds, as well as any tax-exempt interest dividends from a mutual fund or other regulated investment company. Dividends do not include nontaxable distributions of stock or stock rights, returns of capital, capital gains, or liquidation distributions. Taxpayers who paid penalties for the premature withdrawal of funds from time savings accounts or deposits could deduct those penalties as an adjustment to total income. Rental income taken as crop shares is counted as rental income in AGI, not farm income.

Unemployment and workers' compensation and veterans' benefits include income from unemployment compensation and workers' compensation and veterans' payments, including educational benefits but excluding military retirement, which is already included in Government retirement. A minor difference may arise from IRS's reducing unemployment paid based on regular union dues by the amount of dues paid. Because workers' compensation benefits paid "under a workers' compensation act or a statute in the nature of a workers' compensation act" are not taxable, they are not included in the AGI concept. Veterans' benefit payments are not included in AGI, since they are not taxable. AGI excludes payments from workers' compensation or from military or other uniformed services if the payee became entitled to the benefits or was a member before September 25, 1975, or if the payment is due to a combat-related injury. Also, if the payment is from a private disability insurance policy for which the taxpayer paid him- or herself, then the payment is exempt from taxation. Further, railroad retirement disability is treated like Social Security disability for tax purposes.

Public assistance, supplemental security income, and food stamps include public assistance or welfare, including money received from job training grants; supplemental security income paid by Federal, State, and local welfare agencies to low-income persons who are age 65 or over, blind, or disabled; and the value of food stamps obtained. Public assistance, supplemental security income, and food stamps are not included in the AGI concept because they are not taxable.

Regular contributions for support include alimony and child support, as well as any regular contributions from persons outside the consumer unit. Child support, as defined by IRS, is not included in AGI. Regular payments that individuals receive from nonhousehold members are usually not taxable, and thus not included in AGI, although they may be treated as gifts and be taxable to the giver.

Other income includes money income from care of foster children, cash scholarships, fellowships, or stipends not based on working and meals and rent as pay. AGI does not include assistance from friends or relatives. Scholarships and grants that do not represent payment for services, like teaching or research, and which are used for qualified educational expenses, like tuition and books (but not room and board), are not included as they are not taxable. Assistance received from employers can be excluded up to $5,250.

▶ Additional Notes

Capital gains are not included as income in the CE but are included in AGI. State Tax Refunds are not included in the CE but are included in AGI if the taxes were deducted in the immediate prior year. Also, all lump sum payments like prizes, awards, and gambling winnings are not included in the CE but are included in AGI.

BLS uses income from the CE survey obtained from the interview process as its main component too. These data are then further analyzed by showing income and expenditures by quintiles of income before taxes. This is done to compare both income and expenditure components by varying income classes to more easily see trends in the data.

▶ Comparison of Adjusted Gross Income and the Current Population Survey Income Concept

"Earnings" is a three-part concept in the CPS. The first part includes "wages, salary, armed forces pay, commissions, tips, piece-rate payments, and cash bonuses earned, before deductions are made for items such as taxes, bonds, pensions, and union dues." This corresponds most closely to Wages, Salaries, and Tips on Form 1040. Portions of income that are nontaxable are the main source of differences between the CPS concept and AGI. AGI does not include money designated for a health flexible spending or health reimbursement arrangement. Similarly, elective contributions and employer-matching amounts for retirement plans, such as 401(k)'s, tax-sheltered annuities, and the Federal Thrift Savings Plan, are not included in salaries and wages for tax purposes. Also excluded from income for purposes of computing AGI are most forms of armed forces pay earned while in a combat zone or in a hospital recovering from illness or injury suffered in a combat zone.

Net income from farm or nonfarm self-employment makes up the other two categories of earnings on the CPS. The CPS concepts are quite close to the AGI concepts; in fact, the CPS accepts replies for these two categories based on the respondent's tax return. In cases where the respondent does not consult his or her tax return or other official records, differences may arise from change in inventories not being accounted for by the CPS. Also, rental income taken as crop shares is counted as rental income for AGI computation, not farm income.

Unemployment compensation from private or Government sources, as well as strike benefits, are included in both concepts. A small difference may arise from IRS's reducing unemployment paid based on regular union dues by the amount of dues paid.

Workers' compensation, defined as "payments people receive periodically from public or private insurance companies for injuries received at work," is included in the CPS money income concept. Because workers' compensation benefits paid "under a workers'

compensation act or a statute in the nature of a workers' compensation act" are not taxable, they are not included in the AGI concept.

Social Security pensions are a part of the CPS concept, as well as Social Security survivors' and disability insurance payments. IRS includes only the taxable portion of Social Security benefits in its AGI computation. At least 15 percent of benefits are not taxable; if income is under $34,000 ($44,000 for a married couple filing jointly) and the taxpayer is not married filing separately and living with a spouse, at least 50 percent is not taxable.

Supplemental Security Income is included in the CPS concept but not in AGI because it is not taxable.

Public assistance or welfare payments are included in the CPS concept but, again, not in AGI because they are not taxable.

Veterans' payments, under the CPS concept, consist of payments "disabled members of the armed forces or survivors of deceased veterans receive periodically from the Department of Veterans Affairs for education and on-the-job training, and means-tested assistance to veterans." These payments are not part of AGI since they are not taxable.

Survivor benefits include benefits from "private companies or unions, the Federal Government (Civil Service), the military, State or local governments, railroad retirement, workers' compensation, Black Lung payments, estates and trusts, annuities or paid-up insurance policies, and survivor payments." Except for workers' compensation, most survivor benefits are included in AGI. There is an exclusion amount, similar to the Social Security exclusion amount, for railroad retirement survivor benefits. There is also an exclusion amount based on the cost of a private annuity. Also, survivor payments made to families of military personnel who died after September 10, 2001, and payments made to survivors of victims of the 9/11 attacks are nontaxable.

Non-Social Security disability benefits such as disability income from "workers' compensation, companies or unions, Federal Government (Civil Service), military, State or local governments, railroad retirement, accident or disability insurance, Black Lung payments, State temporary sickness, or other disability payments," are included the CPS income concept. AGI excludes payments from workers' compensation or from military or other uniformed services if the payee became entitled to the benefits or was a member before September 25, 1975, or if the payment is due to a combat-related injury. Also, if the payment is from a private disability insurance policy for which the taxpayer paid him- or herself, then the payment is exempt from taxation. Further, railroad retirement disability is treated like Social Security disability for tax purposes.

Pension or retirement income is generally included in both concepts. The CPS concept includes income from "companies or unions, Federal Government (Civil Service), military, State or local governments, railroad retirement, annuities or paid-up insurance policies, individual retirement accounts (IRA's), Keogh, or 401(k) payments." Note that part of railroad retirement is treated like Social Security for tax purposes. Also, if an employee paid part of the cost of a pension, then payments that represent the return of his or her cost are not included in income.

Interest income under the CPS concept is made up of all interest income, including interest from "bonds, Treasury notes, IRA's, certificates of deposit, and interest-bearing savings and checking accounts." Some of this income is included in AGI. Other nontaxable interest, from sources such as tax-free municipal bonds, IRA's, and 401(k) accounts, is excluded from AGI.

Dividends received from stock and mutual fund shares are part of the CPS concept. AGI includes these amounts as well, although distributions of stock or options to buy stock (stock dividends or stock options) are usually not taxable, so long as the distribution is made in common stock and in the same way to all common stockholders.

Rents and royalties, net of expenses, and periodic payments from **estates or trusts** are included in both income concepts.

Educational assistance includes Pell grants, other Government assistance, and financial assistance received

from employers, friends, or relatives not residing in the student's household are included in the CPS concept. AGI does not include assistance from friends or relatives. Scholarships and grants that do not represent payment for services, like teaching or research, and which are used for qualified educational expenses, like tuition and books (but not room and board), are not included as they are not taxable. Assistance received from employers can be excluded up to $5,250.

Alimony is included in both income concepts. Alimony paid is used to reduce the income of the payer in AGI.

Child support makes up part of CPS income but, as defined by IRS, is not included in AGI.

Financial assistance from outside the household that consists of regular payments that individuals receive from nonhousehold members is usually not taxable, and thus not included in AGI, although it may be treated as a gift and be taxable to the giver. This category in the CPS does not include sporadic help or irregular gifts, such as a birthday or holiday present, or educational assistance listed above.

Other income includes all other payments people receive regularly, including foster care payments, military family allotments, and income received from foreign pensions in the CPS concept. AGI includes many types of other income. For example, income from an activity the taxpayer might consider a "business" and might report a net loss for the CPS is included in AGI if the taxpayer did not expect to make a profit. For example, if someone owns two horses and gives a few riding lessons, he or she cannot then treat the upkeep of the horses as a business expense. Rather, the horses would be considered to be kept for personal use, and the income from the lessons would be reported as other income. Alaska permanent fund dividends are reported as other income. This item in AGI also includes some, although not all, foster care payments. Interestingly, the value of found property of which the taxpayer comes into undisputed possession is considered other income. Prizes, gambling winnings, illegal income, the value of property the taxpayer stole, and rewards all count as other income in AGI.

Capital gains are not included as part of income in the CPS money income concept (although there are several "alternative" concepts for income in CPS that attempt to capture capital gains and other forms of income). AGI includes capital gains except for exclusions enumerated in the AGI definition section of this paper.

State tax refunds that were part of an itemized deduction for State income taxes in the prior year are included in AGI. CPS does not include these amounts.

► Comparison of Income Data

Figures A and B present income as measured by the three concepts, along with the capital gains component of AGI. Figure A shows the trend in average income across the agencies. For AGI, this is average income per tax return, and capital gains have been averaged across all tax returns and not just those with capital gains. BLS average income is measured by consumer unit, while Census average income is per household.

Figure B shows the trend in total income across the agencies. Note that, while the definitions on income according to BLS have not changed, the method of collecting income data changed in 2001 with the introduction of brackets. If a respondent reported the receipt of an income component, but refused to answer or did not know the amount, he or she was presented with brackets to select the range that the amount fell into. Prior to the introduction of brackets, these responses were left as invalid blanks. This accounts for the increase in slope for CE average and total income in 2001 [5].

Also worth noting is the acceleration in the rate of increase in AGI starting in the middle 1990's, and the downturn in AGI in 2001. The shape of the trend line for capital gains included in these figures suggests that this behavior may be largely explained by the rapid rise in the value of equities over the last half of the 1990's and the subsequent correction in those values in the early part of the current decade.

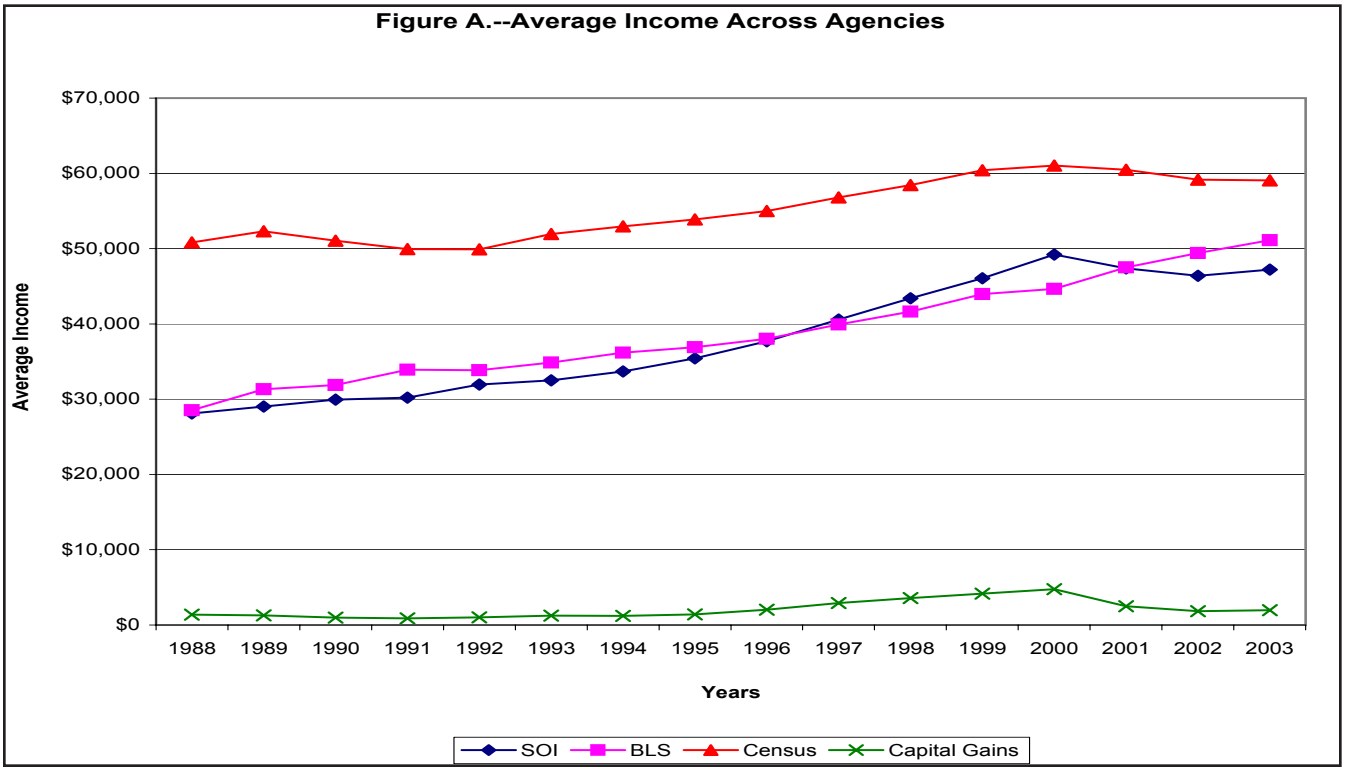
Figure A.--Average Income Across Agencies
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
Average Income
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Years
SOI
BLS
Census
Capital Gains

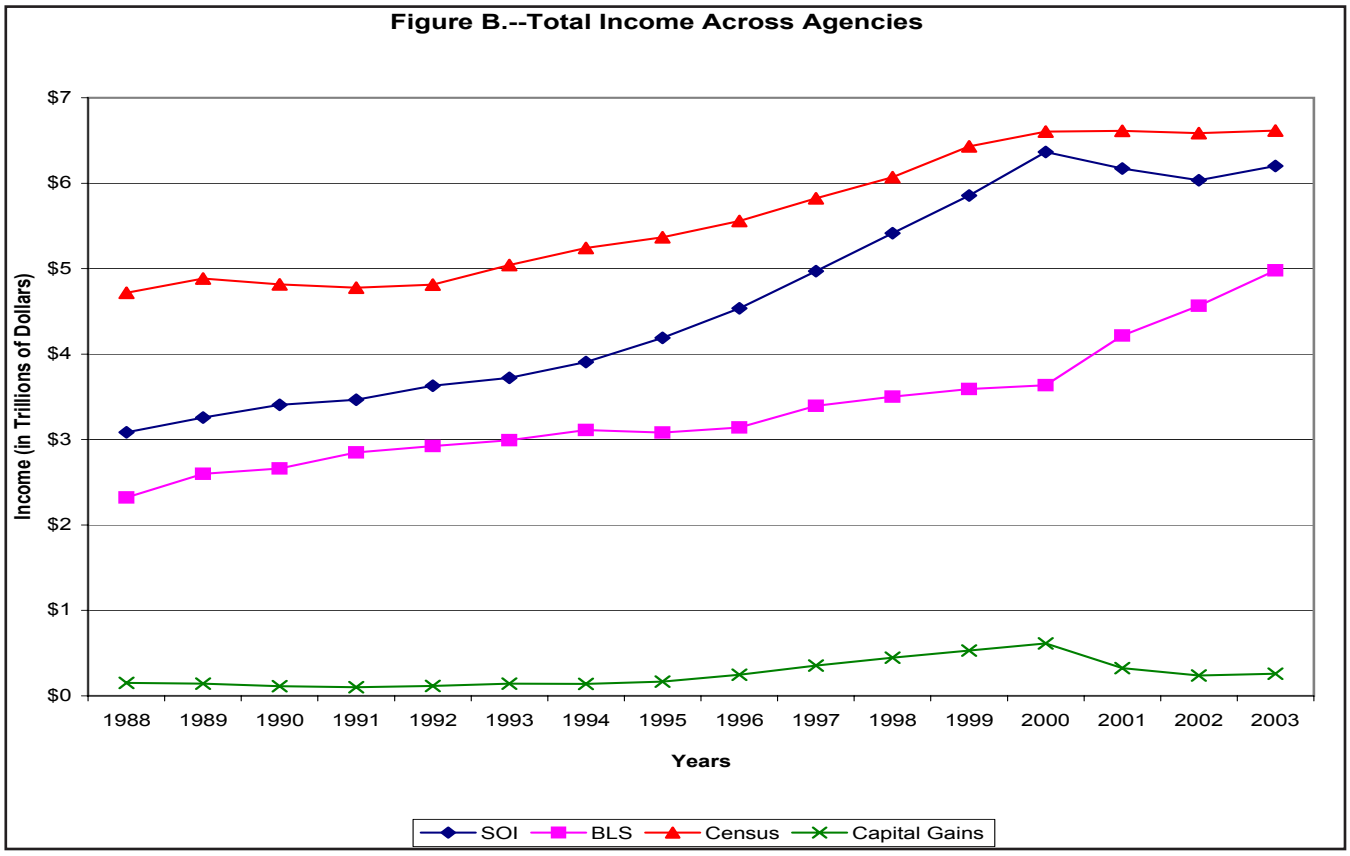
Figure B.--Total Income Across Agencies
$7
$6
$5
$4
$3
$2
$1
$0
Income (in Trillions of Dollars)
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Years
SOI
BLS
Census
Capital Gains

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Endnotes

[1] "Comparability of Current Population Survey Income Data with Other Data," U. S. Census Bureau, h*ttp://www.census.gov/hhes/www/income/compare1.html*.

[2] Weinberg, D., "Income Data Quality Issues in the Annual Social and Economic Supplement to the Current Population Survey," *http://www.welfareacademy.org/pubs/poverty/seminar/2004.10.docs/weinberg_income_data.pdf.*

[3] Ruser, J.; Pilot, A.; and Nelson, C., "Alternative Measures of Household Income: BEA Personal Income, CPS Money Income, and Beyond," *http://www.bea.gov/bea/about/fesac/AlternativemeasuresHHincomeFESAC121404.pdf.*

[4] Material describing the Current Population Survey income concept, along with the data and explanation of terms, can be found at *www.bls.census.gov/cps/cpsmain.htm*.

[5] Material describing the Consumer Expenditure Survey income concept, along with the data and explanation of terms, can be found at *www.bls.gov/cex*.

[6] Descriptions of AGI are taken from *Individual Income Tax Returns,* Statistics of Income Division, Internal Revenue Service, 1988-2002.

[7] At the time of the establishment of the Social Security system, a separate system called Railroad Retirement was established for railroad workers. Tier I of the system replaces Social Security for these workers, while Tier II provides a supplemental pension amount.