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The Underground Economy: New Estimates from Household Income and Expenditure Surveys

Morton Paglin†

This essay develops new estimates of the size of the underground economy in the United States, based on an analysis of the household reports of income and expenditures published annually in the Bureau of Labor Statistics Consumer Expenditure Survey (CES).† Most of the economic literature on the underground economy has focused on the information-distorting effects that unreported economic activity has on the National Income and Product Accounts (NIPA)2 and on the macroeconomic models that use this data. This concern may be misplaced. In recent years the Bureau of Economic Analysis (BEA), which prepares the national income and product figures, has worked to incorporate a large part of underground economic activity into the NIPA totals. A less recognized deficiency is in our household income statistics, where underreporting of income, along with other factors, has undermined the validity of one of our most important social indicators: the poverty rate.

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2. In 1991, the Bureau of Economic Analysis (BEA) started a comprehensive revision of the NIPA and replaced gross national product (GNP) with gross domestic product (GDP) as the primary measure of U.S. production. GDP measures the market value of goods and services produced by labor and property within the United States; whereas, GNP covers the goods and services produced by labor or property (here or abroad) supplied by U.S. residents. To move from GDP to GNP, one adds factor income from abroad (typically interest and dividends) and subtracts payments to foreigners who have claims on income produced in the United States. Gross national income reflects the incomes generated by the production of the GNP. Personal income is income received by individuals and nonprofit institutions from both productive activities and transfer payments (social security, welfare programs, etc.). Personal income less taxes equals personal disposable income, which also equals personal consumption expenditures plus personal savings. Conceptually, income should equal output, but since the BEA uses largely independent methods and data sources to determine aggregate output and total income, there is a small statistical discrepancy each year.


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Before delving into the statistical material that constitutes the core of this Essay, I will briefly review some conceptual approaches to the underground economy. Part I presents the economist's view of the underground economy in contrast to a simple law enforcement approach. Part II, using data from the CES, examines the reluctance of some households to report income fully (or at all), compared with their willingness to report expenditures. This comparison becomes the starting point for new estimates of the underground economy, covering the years 1984 to 1992. Part III carries forward the analysis of household income and expenditures by using the individual micro-data available on public-use tapes, rather than the group averages shown in the published bulletins. Because households are unwilling to report fully, if at all, the income they receive from underground activity, reported household income statistics are a deceptive indicator of poverty status; but a dual standard, employing both income and consumption expenditures, allows us to separate the truly poor from the phantom poor. Part IV uses the insights gained from the analysis of income and expenditure data in Part III to reveal the limitations and defects of the official poverty statistics derived from the Current Population Reports (CPR). Finally, this Essay shows that a few simple remedial measures could mitigate the distorting effects that unreported income has on our poverty statistics, and make those statistics more truly representative of the number of persons actually living below the poverty thresholds.

3. BUREAU OF LABOR STATISTICS, U.S. DEP'T OF LABOR, CONSUMER EXPENDITURE SURVEY TAPES, 1960-92 [hereinafter CES TAPES]. The Bureau of Labor Statistics (BLS) offers for sale computer tapes of all of the household data collected in the surveys, except for information, such as addresses, that would reveal the identity of the participants. These tapes offer more information than can be obtained from the printed bulletins. The data derived from these tapes that are used in this Essay are on file with the author.


5. The poverty thresholds refer to a set of minimally adequate incomes sufficient to cover the basic necessities for households of various sizes and composition. Persons living in households reporting annual money incomes below these thresholds are classified as poor. The thresholds were constructed in 1963 by a group in the Social Security Administration. The basic building block of the thresholds was the cost of a nutritionally adequate diet. Using household budget data, a food-other-necessities-multiplier was calculated for families of various sizes; these multipliers, applied to the cost of the food basket (the amount of food, given American tastes, that the National Research Council and the Department of Agriculture have determined is necessary to meet recommended dietary allowances), were used to estimate nonfood requirements. Since 1963, the poverty thresholds have been updated each year by applying the BLS consumer price index (CPI) to the 1963 thresholds. The CPI was supposed to adjust for inflation, but since the CPI over-indexed inflation in the late 1970's and early 1980's, the poverty thresholds have been raised slightly in real terms. The effect of this was to increase official poverty—for example, in 1992 from 13.1% (if the corrected CPI is used) to 14.5%. BUREAU OF THE CENSUS, MEASURING THE EFFECT, supra note 4, at xvii tbl. F, I-10 tbl. I-4. For an analysis of the poverty thresholds, see chapter one of MORTON PAGLIN, POVERTY AND TRANSFERS IN-KIND: A RE-EVALUATION OF POVERTY IN THE UNITED STATES (1980).
I. THE ECONOMIC APPROACH TO THE INFORMAL ECONOMY

The rationale for the law enforcement approach to the underground economy is straightforward: society through its elected representatives makes decisions to tax, constrain, or prohibit certain activities; unless these laws are enforced, there will be an erosion of confidence in the political process and in the institutions of democratic government. The economic approach, on the other hand, is less resolute in its condemnation. Laws and activities are evaluated in terms of economic efficiency and welfare criteria: Are the gains greater than the losses, so that real output is increased? Are the parties in a transaction made better off with little or no negative effects on others? Viewed in these terms, some underground activities can be shown to have net benefits; whereas, in other cases, particularly the sale of illegal goods, such as drugs, the detrimental effects predominate. In general, the existence of an underground activity on a wide scale may be a useful signal that the law is not effective and should be revised or repealed.

An economic case for justifying underground activities can be stated in terms similar to those used to justify governmental measures to eliminate market failures. Markets fail to function efficiently when externalities produce major divergences between private costs and social costs (the pollution problem, for example); when collusion among firms results in restricted output and monopoly rents; and when, because of the difficulty of collective action, a market economy produces a sub-optimal level of public goods. The government responds to these market failures by enacting antipollution laws, pursuing antitrust actions, and providing public goods financed through taxation and borrowing.

But what remedies do we have when government itself exacerbates market imperfections by restricting competition through exclusive franchises, raising farm prices through support programs, imposing regulations that discourage employment, or maintaining expenditure levels for public goods and entitlements (with a corresponding level of taxation) that the public deems too high? An obvious remedy is political action, but given the potency of special interest groups, change through the legislative process may be slow or not forthcoming. Another remedy, which requires no political organization, is the informal market. When laws make markets less efficient by imposing economic constraints, the informal market, through unrecorded private transactions, off-the-books employment, and barter, may improve economic efficiency. However, corrective mechanisms in the underground economy, like those in the government, have their own failures. Just as government regulatory agencies that are set up to protect the consumer (such as the Interstate Commerce Commission) may end up protecting established business interests, operators in the underground economy, who illegally dump toxic wastes,
increase market failure by subverting the efforts of government to control externalities.

The rationale for the more tolerant economic approach can be shown most strikingly in countries where burdensome laws and regulations cause the informal economy to become an important economic safety valve. After World War II, governments in Ghana and other West African countries required all cocoa farmers to sell their output to the government marketing board ostensibly to stabilize prices. Instead of passing the revenue on to the farmers, the board began to skim off an increasingly large margin, leaving many producers with incomes insufficient to maintain their farms, and eventually resulting in a decline in the supply of cocoa. Instead of selling all their cocoa to the government, some farmers resorted to smuggling cocoa across the borders to take advantage of the higher market price. Becoming part of the underground economy posed risks, but it was the only way some of them felt they could survive. It was a rational response to a parasitic bureaucracy, and allowed more income to flow to the producers.

In Italy over the past thirty years, the myriad laws relating to worker management, taxation, and restrictions on business have led to the growth of a vigorous and efficient informal sector. In the view of some Italian economists, this informal sector has kept the economy functioning in the face of a corrupt, unstable, and poorly managed government.

In the United States, laws that prohibit the employment of undocumented aliens have created a large underground garment industry with entry-level jobs for immigrants with little knowledge of English. Minimum wage, maximum hour, and rent control legislation has also enlarged the extent of informal negotiations to circumvent the laws. Though many argue that minimum wage and rent control legislation protects the public interest, most economists oppose such laws and regard individual negotiations to get around the restrictions as beneficial to the parties involved. Raising the minimum wage

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8. A vigorous crackdown on underground employment in the garment trade is demanded in Lora J. Foo, The Vulnerable and Exploitable Immigrant Workforce and the Need for Strengthening Worker Protective Legislation, 103 Yale L.J. 2179 (1994). I regard such a crackdown as harmful to the workers, and very likely to leave many without jobs or income. Low-wage garment production, for example, can easily be shifted abroad.
10. A recent econometric study again produced the familiar results that an increase in the minimum wage raises teen-age unemployment. Janet Currie & Bruce Fallick, A Note on the New Minimum Wage Research (Nat'l Bureau of Economic Research Working Paper No. 4348, 1993). Liberal and conservative economists usually agree that minimum wage laws are not an effective way to help the poor. See, e.g., Lester C. Thurow, The Zero-Sum Society: Distribution and the Possibilities for
produces greater unemployment in the ranks of unskilled and inexperienced workers, while those who keep their jobs are made marginally better off at the expense of the least advantaged. Economists oppose rent control legislation because it leads to inefficient use of the housing stock, deterioration and abandonment of buildings due to poor maintenance, reduction in the supply of new rental units, and an unfair redistribution of wealth.\textsuperscript{11} If rent control regulations are loosely enforced, landlords will seek to collect something closer to the market rent, taking payment in cash under the table. This underground economy in rent-controlled apartments, although illegal, improves economic efficiency and, arguably, the general welfare.

A very large part of the informal sector is inextricably linked with the regular economy. The two exist side by side in firms that report most of their income, or hire mostly legal workers, and in households that report regular employment income, from which taxes are withheld, but fail to report cash income from occasional part-time work. Sometimes money derived from the sale of illegal goods (drugs mostly) is used to purchase and operate legitimate businesses; in such cases, legal and illegal activities are linked by common ownership.\textsuperscript{12} For the economist, the central concern is not the source of the income—whether from legal or illegal activities—but whether it is reported and included in the national income accounts, in the Census Bureau’s household income surveys, and in the adjusted gross income totals of the IRS. The accuracy of the statistical data on which policy evaluations and policymaking depend is threatened when a large amount of income and economic activity is unreported. Some illegal income is reported to the IRS under “other income,” and some is disguised as legitimate business income, because a high level of personal expenditure with no declared income makes one a prime candidate for investigation. But undoubtedly a high percentage of illegal income is not reported.

Let us now consider two definitions of the underground economy—one defined broadly in economic terms, the second defined precisely by the IRS through its legal codes. Each definition has a different emphasis reflecting different policy concerns. The informal economy is most broadly defined as...
all economic activity (market and nonmarket) not recorded in the NIPA. This definition includes the household sector as a large component of the underground economy. Why add the value of unpaid housework to the unreported income from goods produced by illegal aliens? The reason is that both represent output not reported or fully included in the NIPA. When making international comparisons, GNP per capita is used as an index of well-being. Since countries differ sharply in the proportion of women in the paid labor force, GNP figures are less meaningful if they exclude the household sector. In the United States, this sector is estimated to be at least 24% of GNP, and in other countries the percentages vary significantly. Economic historians study long-term growth rates in GNP; the sizeable shift of women from the household to the market economy has affected this trend, and GNP growth rates would be more meaningful for some purposes if we factored in the decline of the household sector as women shifted to the market sector.

On a related issue, some economists have claimed that the slowdown in GNP growth rates may be illusory—a spurious statistical artifact—because the NIPA has not encompassed a growing underground economic sector. In recent years, however, the BEA has adjusted the NIPA to include unreported income. For example, IRS tabulations supplied to BEA of incomes reported by single proprietorships are adjusted upward very significantly on the basis of IRS sample audits of these businesses. If such imputations are done extensively, and unpaid housework is valued by using the wages of housekeepers, nannies, etc., as market analogues, then theoretically most of the underground economy could be captured and recorded in GNP estimates, and would therefore disappear according to the first economic definition given above. Yet underground activity would still be as large as before: imputing unreported income in the NIPA may satisfy the economist, but it does nothing to reduce tax evasion and other illegal economic practices.

The legal definition of the underground economy, used by the IRS, is narrower than the economic definition. Since the law does not impose taxes on the value of household or other do-it-yourself activities, the IRS can ignore such nonmarket income; thus, it excludes the output of the household sector from its measure of the underground economy in order to concentrate on unreported income from the market sector only. The IRS seeks instead to

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13. Unpaid housework has been valued at about 24 to 34% of GNP. J.J. Thomas, INFORMAL ECONOMIC ACTIVITY 24 (1992). The BEA does not include this nonmarket sector in the national income accounts, but it does include the imputed rental value of owner-occupied houses in order to insulate GNP estimates from capricious changes that would result from shifts in the proportion of rental housing to owner-occupied housing. NIPA, supra note 2.

14. One persuasive argument against including the household sector is the difficulty of estimating the value of nonmarket activities and the wide variation in the results of the different studies. Thomas, supra note 13, at 24-25.

estimate the adjusted gross income (AGI) total that would emerge if all households correctly reported their income and deductions according to the income tax codes; this total is then compared to the actual AGI reported by taxpayers, and the tax loss (tax gap) is calculated by applying the appropriate tax rates to the missing AGI. For the economist, the IRS tax gap approach is too narrow, because it misses a substantial segment of the underground economy. For example, the undocumented worker whose income was below the filing requirement would not be included in the IRS measure of the underground economy, yet most other measures would include the income of low-wage illegal workers.

II. MEASURING THE UNDERGROUND ECONOMY USING HOUSEHOLD SURVEY DATA

The effect of underreported income on our national income accounts has received the most attention from economists, but underreporting also affects the household income series in ways that have profound consequences for economic analysis and social policy, especially in the areas of income distribution and poverty. This Part examines how underreporting distorts the household income data; it also considers the benchmarks that can be used to determine the extent of income concealment, and suggests ways to correct the distortions induced by underreporting of household income.

Businesses large and small report to the IRS their gross receipts as well as factor payments (wages, salaries, rents, dividends, interest, and undistributed profits). While the BEA uses this data to estimate national income and output, it cannot use it to generate the household income distribution, because each household may receive many types of income from many sources—wages from one or more earners, interest and dividends, entrepreneurial profits, etc. Ideally, the adjusted personal income totals in the national income accounts, which are based on business reports of income paid out, should correspond with aggregate income reported by households, but the distribution of household income can be obtained only from an independent survey of households, such as the CPS or CES. IRS income tax data has only limited value in this regard for three reasons: first, not every household must file a return; second, some households file more than one return (in households with multiple earners, some file jointly and others separately); and, third, economic and social analysis of income requires demographic data and other information not found in IRS tax returns.

This Part analyzes the impact of the underground economy on the validity of the household income data and the effect that nonreporting and underreporting of income has on one of our most widely cited social indicators, the poverty rate, which is the percentage of the population classified as poor. The household income statistics come from two standard sources: (1)
the U.S. Bureau of Labor Statistics annual Consumer Expenditure Survey (CES), and (2) the Bureau of the Census Current Population Survey (CPS), which is used to derive our official poverty statistics.

Using the CES data, this Part demonstrates that a household’s statement of both its consumption expenditures and its income can be used to elucidate the deficiencies in the income-based poverty measure currently in use, and to generate a new measure of the underground economy. Let us start with the larger problem of estimating the total amount of missing income due to some peoples’ reluctance to reveal their full incomes. In 1991, 14.2% of the households in the CES refused to answer questions about the principal source and amount of their income, even though they agreed to answer all questions relating to expenditures and demographic characteristics. These “incomplete income reporters,” sometimes referred to as zero income reporters, are segregated from the “complete income reporters,” though even the “complete income reporters” do not necessarily report all their income. Because the reluctance to disclose information is typically due to concern for the legal or tax consequences of disclosure, economists generally assume that the gap between aggregate reported income and reported expenditure, if income is the smaller figure (as it has been), gives us a first approximation of the extent of the underground economy.

Now let us examine the data. The CES is based on a national probability sample of 5000 households. These households are questioned every three months about their expenditures. In two of these quarters, questions are also asked about income, and in one of these quarters, questions are also asked about assets, net worth, and the like. This “Interview Survey” is supplemented by a “Diary Survey,” in which people keep detailed records of the smaller items purchased—food, household supplies, medicines, etc.—for a two-week period. In recent years, CES has integrated the results of the

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16. Individuals are reluctant to reveal income for any number of reasons, for example because: (1) the income is from illegal activity (drugs, prostitution, gambling, etc.) or from a legal activity carried on in a way that is illegal—for example, producing a legal good or service with the help of undocumented aliens or hiring household help whose income is unreported in order to escape the burden of filing and paying social security taxes; (2) the income is legitimately earned by a self-employed person who evades some income and social security taxes by requesting payment in cash; (3) the income, if reported, would jeopardize a work or income-conditioned government transfer payment such as unemployment insurance, worker’s compensation, welfare or food stamps (or alternatively, the transfer payment is not reported); or (4) the income is earned by someone who is secretive or simply cannot correctly estimate household income, but willingly provides detailed information on consumption expenditures. Whether income goes unreported because it is part of the underground economy or because someone is simply mistaken is irrelevant; in either case, the failure to report distorts information on which theoretical work and policy analysis are based.

17. See Table 2, infra p. 2251; 1990-91 CONSUMER EXPENDITURE SURVEY, supra note 1, at 14. The figure 14.2% is derived by dividing the number of “Zero Income Reporters” for 1991 (in the last column of Table 2) by the “All Households” figure (in the first column), and multiplying by 100.

18. See Table 2, infra p. 2251.

19. 1990-91 CONSUMER EXPENDITURE SURVEY, supra note 1, at 243.

20. Id.
Interview and the Diary Surveys to obtain something close to complete coverage of personal consumption expenditures. The CES then "blows up" the sample results to replicate the approximately one-hundred million households (or consumer units) in the United States.

In 1991, the CES showed aggregate household expenditures of $2.898 trillion (97.9 million consumer units with a mean expenditure of $29,614). What is the appropriate aggregate income to compare with aggregate household expenditures? The Bureau of Labor Statistics states that, unlike the Census Bureau, it does not impute income to households who do not report any. But in effect it does so (at least when it computes aggregate income), because unlike the expenditure figure shown above, the aggregate income figure given is based solely on the income of the complete income reporters (eighty-four million households), blown up to replicate all U.S. households. This method implies that the households that failed to report income have been assigned an average income equal to that of the complete income reporters. Hence, the CES lists the mean income (after taxes) for all 97.9 million households as $30,729, exactly the same figure shown as the mean of the 84.0 million households who actually reported income.

Substantial expenditures by those who report no income suggests substantial concealed income. Since we wish to estimate that concealed income, it makes sense to compare the total expenditures reported by all households in the sample with their total reported income. If we follow this procedure, we come up with an income total for all households in 1991 of $2.582 trillion. This total is derived by multiplying the mean after-tax income of the complete income reporters by the number of such households, eighty-four million; the 13.9 million who refused to divulge their incomes add nothing to the income total but do add to the expenditure total, since they willingly revealed in detail their purchases of consumer goods. The difference between the aggregate expenditures and aggregate reported income comes to $317 billion, which is our first approximation of the size of the underground economy. However, this figure is too small since it is based on a theoretical disposable income just sufficient to cover consumer expenditures; consumers also saved part of their disposable income, 4.8% in 1991. Thus, our income total must account for both expenditures and savings. We accomplish this by dividing expenditures ($2.897) by (1 minus .048), which yields a theoretically necessary disposable income of $3.043 trillion. Subtracting our reported income figure of $2.582 from $3.043 raises the estimate of concealed income to $461 billion, of which $106 billion (23%) represents the underreporting of the so-called "complete income reporters" ($106 billion is derived by

21. Id. at 14.
22. Id.
23. See Table 2, infra p. 2251.
calculating the income deficit of the zero income reporters and subtracting it from the total income deficit of $461 billion). This $461 billion estimate of the underground economy is 9.5% of personal income or 8.1% of GDP. Table 1 gives estimates of the underground economy, for the years 1984 through 1992, using the procedure described above.25 The data in Table 1 indicate that the underground economy is declining slightly relative to the GDP. The observed decline may be related to the growth in jobs and employment in the 1980's.26

25. Table 1, infra p. 2249. The IRS estimated that in 1981 there was unreported income from legal activities of $249.7 billion plus $34 billion from illegal activities. Richard D. Porter & Amanda S. Bayer, Monetary Perspective on Underground Economic Activity in the United States, in THE UNDERGROUND ECONOMIES, supra note 7, at 129. The total ($284 billion) is 9.4% of $3.031 trillion, the GDP for 1981. For 1987, the IRS estimated a tax loss of $71.2 to $84.9 billion due to nonreported income. I.R.S., U.S. DEP'T OF THE TREASURY, PUB. NO. 7285, INCOME TAX COMPLIANCE RESEARCH 10 n.3 (1988) [hereinafter 1988 INCOME TAX COMPLIANCE RESEARCH]. A marginal tax rate of 20% generates an unreported AGI of $365 to $424 billion, or 7.8% to 9.3% of GDP. These percentages, which average 8.6%, are in line with my estimates of the underground economy (8.5% in 1987), shown in the last column of Table 1. In a recent study using IRS data, the Department of Labor concluded that the underground economy in 1992 amounted to $539 billion. GREGORY K. SCHOEPPLE ET AL., SECRETARÍA DEL TRABAJO Y PREVISION SOCIAL DE MEXICO & U.S. DEP'T OF LABOR, THE UNDERGROUND ECONOMY IN THE UNITED STATES 24, tbl. 7 (1992). Since the latest revised GDP for 1992 was $6.038 trillion, this new estimate of the underground economy equals 8.9% of the above-ground economy—again, a reasonable fit with my series in Table 1, which shows 8.1% of GDP for 1992.

26. In 1983 there were 10.7 million unemployed, an unemployment rate of 9.5%; in 1990 this had dropped to 6.9 million, an unemployment rate of 5.4%; an increase occurred in 1991 to 6.6%, but this increase was still 31% below the unemployment rate of 1983. BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES 1993, at 393, tbl. 621 (113th ed. 1993) [hereinafter STATISTICAL ABSTRACT OF THE UNITED STATES 1993]. As jobs opened up in the formal sector, some workers shifted out of the underground sector.
### TABLE 1. Estimates of the Underground Economy Derived from Household Surveys of Income and Expenditures, 1984-1992

<table>
<thead>
<tr>
<th>Year</th>
<th>Unreported Income (Billions)</th>
<th>As a Percent of Personal Income</th>
<th>As a Percent of Gross Domestic Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>$387</td>
<td>12.4</td>
<td>10.2</td>
</tr>
<tr>
<td>1985</td>
<td>439</td>
<td>13.0</td>
<td>10.9</td>
</tr>
<tr>
<td>1986</td>
<td>381</td>
<td>10.8</td>
<td>8.9</td>
</tr>
<tr>
<td>1987</td>
<td>386</td>
<td>10.2</td>
<td>8.5</td>
</tr>
<tr>
<td>1988</td>
<td>442</td>
<td>10.8</td>
<td>9.0</td>
</tr>
<tr>
<td>1989</td>
<td>412</td>
<td>9.4</td>
<td>7.8</td>
</tr>
<tr>
<td>1990</td>
<td>462</td>
<td>9.9</td>
<td>8.4</td>
</tr>
<tr>
<td>1991</td>
<td>461</td>
<td>9.5</td>
<td>8.1</td>
</tr>
<tr>
<td>1992</td>
<td>492</td>
<td>9.6</td>
<td>8.1</td>
</tr>
</tbody>
</table>

One should not conclude from our estimates of underground activity that the Personal Income or Gross Domestic Product figures of the BEA are too low by the amounts shown in Table 1. As already noted, the BEA in the past decade has adjusted its income and output figures upward significantly in order to capture or record underground activity. However, the BEA excludes illegal goods such as drugs, prostitution, and loan sharking from the NIPA. The BEA makes no formal estimate of the underground economy, but the total of its adjustments for unreported economic activity and for tax evasion represents its rough view of the underground economy's dimensions. In 1990, these adjustments equalled approximately $250 billion. This is 54% of the $462 billion shown for that year in Table 1. If these figures are approximately correct, then GDP is understated by less than 4%.

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28. Telephone Interview with Robert Parker, Chief of the National Income Division, BEA (Mar. 1, 1994).

29. For information on the BEA's techniques for dealing with the underground economy, see Carson, supra note 12, and Robert P. Parker, Improved Adjustments for Misreporting of Tax Return Information Used to Estimate the National Income and Product Accounts, 1977, SURV. CURRENT BUS., June 1984, at 17-25. The BEA's decision to exclude sales of illegal drugs (and other illegal goods) from GDP is, I believe, justified for three reasons: (1) it is not possible to get reliable data, (2) because they are illegal,
My estimates closely correspond to the adjusted gross income deficits revealed by IRS audits of tax returns and by matching studies devised by the IRS to find the amount of AGI lost through non-filers.\textsuperscript{30} My estimates are slightly more inclusive because they include low-income workers who evade social security taxes. Their incomes do not appear as part of the IRS AGI figures, because low-income-workers are not required to file or pay income tax.

The CES data reviewed above show that some households underreport their income, and, as shown earlier, there are strong economic incentives to do so. Because most people are forthcoming about every other aspect of the survey, the failure to report income is probably not simply due to oversight. Along with questions on expenditures, the surveyor also asks about contributions to social security and pension plans. Consistently, over the last ten years of the survey, the “incomplete income reporters” gave very low figures (I believe truthfully) for such contributions as compared to all other households who had similar levels of expenditure. In 1991, the complete income reporters, in the third quintile, whose expenditures averaged about $25,000 (as did their income), stated that they paid an average of $1,948 into social security or pensions. In contrast, the zero income reporters (with the same level of expenditures) stated that they paid an average of only $274. Since they could have declined to answer, as they did on the income questions, it is reasonable to assume that they really did pay these small amounts because most of their income was not reported, and hence escaped both social security and income taxes. The IRS audits show that a high percentage of the income underreporters come from the self-employed (whose social security tax rate is twice that of a company worker), so we can infer that if all their income had been declared, their contribution would be much more than the $1,948 paid by the other group, rather than the small amount noted. Finally, it is not likely that the (near) zero income reporters actually had no income and were using up their savings, since they reported a greater increase in net worth from the previous year ($1556) than the average for all other households of $300.\textsuperscript{31}

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\textsuperscript{31} 1990-91 \textit{CONSUMER EXPENDITURE SURVEY}, supra note 1, at 17.
III. HOW SHOULD WE MEASURE POVERTY—BY INCOME, CONSUMPTION, OR BOTH?

Clearly, one major consequence of the underground economy is underreported and nonreported household income. This makes low reported income an unreliable indicator of economic welfare because mixed in with the truly poor are those whose standard of living is far above the poverty level. This point is shown vividly in Table 2. The poorest quintile of households had an average after-tax income of $5,648 but an average expenditure level more than twice that ($13,464). The second income quintile also showed a significant disparity between consumption expenditures and income. The gap between income and expenditure would be far more striking if the incomplete or zero income reporters were put in the lowest quintile. The gap shown in the table is attributable to two factors: underreporting of income by those who report some income and the variability of annual income. As yet, I have not been able to determine the size of each group. But when evaluating income as a measure of poverty status, identifying the two groups is not of crucial importance—for both groups, reported income gives a false indicator of need. This suggests the value of a dual measure or test of poverty.

<table>
<thead>
<tr>
<th>TABLE 2. Average Expenditures by Income Class, 1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Households</td>
</tr>
<tr>
<td>Number of households</td>
</tr>
<tr>
<td>Pre-tax income</td>
</tr>
<tr>
<td>Post-tax income</td>
</tr>
<tr>
<td>Average annual expenditures</td>
</tr>
<tr>
<td>Average number of persons in unit</td>
</tr>
</tbody>
</table>

32. Many with higher long-run average incomes have down years in which they continue to consume at a high level.
33. Table 2 is derived from data in the 1990-91 CONSUMER EXPENDITURE SURVEY, supra note 1, at 14. Complete income reporters only are classified by quintiles on the basis of pre-tax income. Average income in the “All Households” column includes the zero income reporters. BLS does not give this figure, but simply repeats the same average income figure shown in the “Complete Income Reporters” column. This in a sense imputes income to the zero income reporters equal to the mean income of the complete reporters. (It should be noted that the complete income reporters may underreport their incomes, and the zero income reporters may report minor amounts of income.)
Figure 1 illustrates the effect and greater realism of a two-variable classification for categorizing rich and poor households. Figure 1, which uses micro-data from the CES Tapes for 1984, shows the contrast between an income measure of poverty and a consumption measure. Household income and expenditures have been converted to multiples of the official U.S. poverty thresholds so that single persons, small families, and large families can be compared. Such a conversion is necessary to make any realistic comparison of income differences. In Figure 1, income is shown on the horizontal scale and expenditures on the vertical scale. Households that fall below the income poverty threshold appear in the left two boxes, while the income-rich occupy the two boxes on the right. Those who fall below the poverty line in terms of their consumption expenditures (the consumption-poor) are in the bottom two boxes. Significantly, although 17.7% of households are income-poor, less than half of them—only 7.5% of all households—are actually consuming below the poverty threshold. These households are the truly poor and are shown in the shaded lower box. However, we must keep in mind that many in this group receive Medicaid or Medicare, low- or zero-rent public housing units, energy assistance, free school lunches, and other public subsidies to supplement their cash consumption expenditures.

34. Rich here simply means not poor.
35. Expenditures for vehicles have been excluded, so consumption has been slightly understated. Expenditures excluded purchases of vehicles because BLS considers the entire expenditure made in the year of purchase even if the vehicle is paid for over several years. This approach is acceptable when calculating average vehicle expenditures for a large group of households, but it would distort the individual household data used in our poverty analysis.
36. A family of four with an income-poverty ratio of three is considered to be at the same welfare level as a two-person household with that ratio because, even though the money income of the four-person family is considerably higher in dollar terms, both have a real income three times the poverty level.
37. Using per capita household income is another way of doing this, but it is not satisfactory because it does not take into account the economies of scale in larger households.
38. Food stamps are the only in-kind transfer added to household income in the CONSUMER EXPENDITURE SURVEY, supra note 1, at 241. No in-kind transfers are included in the income definition used in the Current Population Survey, our official source of poverty statistics, BUREAU OF THE CENSUS, U.S. DEP’T OF COMMERCE, SERIES P60-184, CURRENT POPULATION REPORTS: CONSUMER INCOME: MONEY INCOME OF HOUSEHOLDS, FAMILIES, AND PERSONS IN THE UNITED STATES: 1992, at ix (1992) [hereinafter BUREAU OF THE CENSUS, MONEY INCOME]. "The official income estimates in this report are based solely on money income before taxes and do not include the value of non-cash benefits such as food stamps, Medicare, Medicaid, public housing, and employer-provided fringe benefits." Id. For further details on the income definition used, see id. at C-12. For a critique of the Census Bureau’s income concept and a discussion of the poverty thresholds, see PAGLIN, supra, note 5, chs. 1-2.
Now let us examine the larger segment of the income-poor who are consumption-rich, the 10.2% of the households shown in the upper left box. Using the CES Tapes, I have analyzed their consumption expenditures in some detail, and, surprisingly, many of these income-poor are living exceedingly well: 13% are spending between four and fifteen times the poverty threshold income, putting them among the top 20% of the expenditure distribution. Taking a broader segment, 45% of the income-poor, consumption-rich were spending between two and fifteen times the poverty level, with the heaviest concentration at the lower end. In terms of 1992 dollars and poverty thresholds for a family of four, this would mean an expenditure range of $28,700 to an exotic $215,000 for the high end (probably a millionaire with losses in that year). The remaining 55% of the group, while above poverty, had relatively modest expenditures, between one and two times the poverty thresholds. It is fair to say that the income-poor, consumption-rich make up an unusually diverse group in terms of their financial assets and their expenditures; most do not belong in the traditional poverty class. The merit of the dual consumption-income standard is that it allows us to sort out the people who are not in need of public aid; it also adds a needed dose of realism to any discussion of the question of why the United States, a wealthy nation, has such a large poverty population. The answer, of course, made clearer below, is that,

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39. The figures are derived from micro-data on the CES TAPES, supra note 3. The households in the income-poor, consumption-rich box were classified by their expenditures, which are expressed as multiples of the official poverty thresholds; the resulting relative frequency distribution provided the percentages stated.
although we have a poverty problem, a statistical illusion has blown it up to
two or three times its true dimension.

The two boxes on the right require only brief explanation. The one on the
upper right contains 78% of the households: the income-rich, consumption-rich.
They are what they seem; overall, their expenditures reflect their income. The
lower right box (income-rich, consumption-poor) raises some questions. These
households are just 4.3% of all households, but who are they, and why are
they spending at a level below poverty when their incomes would allow for a
more adequate standard of living? Some of these people may be very frugal
or may lead simple lives in farm or country areas and require relatively low
expenditures, perhaps because they raise part of their own food or live in debt-
free houses. Others in this group may be employed as live-in housekeepers or
in institutions that supply some of their food and other needs. In any case,
from a policy perspective, they should not be considered poor because they
have private incomes sufficient to raise their consumption if they wish to do
so.

Large numbers of the phantom poor—those whose declared incomes are
low (or zero) and whose expenditures are substantial—have as their income
source the underground economy. The easiest way of removing them from
their incongruous designation—short of eliminating the underground
economy—is to adopt a joint income-consumption poverty standard. Because
we commonly perceive poverty in terms of inadequate consumption of the
basic necessities, such a standard would also have theoretical merit. If someone
were supplied with free housing of good quality, adequate food, good medical
care, free education, and legal services, for example, would it matter if her
money income were below the amount required by someone else who had to
purchase all of these necessities? Most people would say no, and that is the
reason why it makes sense to add the consumption criterion to the poverty
standard, or at least to include the value of these consumption goods (called
income in-kind) if we use a single income standard. We must realize, however,
that an income standard, even if the definition is broadened to include income
in-kind, will never be as rigorous as the dual standard as long as we depend
on self-reporting of income in household surveys (and there is no practical
alternative) and have laws that penalize tax evasion and receipt of income from
illegal sources. On the other hand, as we have seen, people tend to be
forthcoming about their consumption expenditures.40

40. It should be added that the Census Bureau, which conducts the Current Population Survey, assures
people of the confidentiality of the information they give, but the public doubts the firmness of this
assurance.

Some people... don’t give the information to the Bureau of the Census because they are afraid
it will get into ... other hands; law enforcement agencies, IRS, et cetera. To the best of my
knowledge, there has never been any disclosure of confidential data by the Census. But some
people still do not want to take any chances.
IV. IMPROVING OUR OFFICIAL POVERTY STATISTICS

How could we implement the consumption-income poverty standard? One obvious way would be to use the annual Consumer Expenditure Survey, since it has both expenditure and income data. But this approach is not practical; although the CES is large enough to give us national estimates, it is far too small to give us state poverty figures or the breakdowns we need by age, ethnicity, and so on. In contrast, the Current Population Survey is more than ten times as large, a sample of 60,000 households with extensive details on the composition of households—the number of earners, their educational level, urban-rural location, family size, and details on income from all sources. Its principal deficiency (beside its lack of information on expenditures) is its antiquated definition of income. However, our best hope for improving our household income statistics and our poverty counts is to change the questions asked in this large national survey and to find better ways to use the information now collected, but not used, in estimating the official poverty figures.

These changes would not be difficult to implement. First, the income concept should be broadened from the one in use: money income before taxes. The current definition originated in 1946, when the CPS was inaugurated; at that time, government in-kind transfers were a negligible component of aid to the poor, and employer-provided fringe benefits, such as health insurance, were of minor importance to all income groups. But in 1990, more than $186 billion in aid to the needy was in the form of in-kind transfers—food stamps, low rent housing assistance, Medicaid, and the like. These massive antipoverty programs now constitute 70% of total public aid, and they dwarf cash assistance programs such as Aid to Families with Dependent Children.
Yet because of the narrow definition of income, these multi-billion dollar programs—the fastest growing segment of the budget—are not counted as part of the income of the poor. So it is not surprising that official poverty rates in recent years hover near the 14% level. Interestingly, the Census Bureau now collects the information required for a broader definition of income and publishes it in separate technical supplements showing poverty rates based on alternative income concepts. Although there are still gaps to be filled (for example, estimates of the cash and in-kind transfers not reported by households), the use of the broadest definition of income dramatically reduces the poverty rate and indicates that the official poverty rate is overstated by 39% and the number of poor persons, by 10.3 million (1992 figures).

Why are the improved income concepts not used in making the official poverty counts? The reasons are mainly political. Large amounts of federal monies are allocated to states and regions on the basis of the existing poverty series; politicians fear that reducing the artificially high figures would also reduce federal funds coming to their states. Other groups who have an interest in federal poverty programs fear that a lower poverty rate might also reduce their budgets. On the other hand, the public would feel less cynical about government programs if they were shown to be effective in reducing poverty. The improved income concepts recommended here would also help social scientists to see accurately the effects of transfer programs and economic growth on the size of the poverty population.

Broadening the income concept to include in-kind transfers brings the 1992 poverty rate down from 14.5% to 10.4%, but it still does nothing to rectify the underreporting of income. The Census Bureau, which uses benchmarks from NIPA and government budgetary control totals, shows that CPS income totals are 88% of the benchmarks. However, only 78% of the published CPS income comes from household respondents; 22% comes from imputing income to persons who fail to report; this was done by matching them with other, demographically similar households who did report their income. This procedure is basically reasonable, and in the case of government transfer payments, where the control totals are precise and the income qualifications for receiving the transfer are also spelled out, even more could be done to correct for underreporting. But there is also a downside to imputing income to those who fail to report it, because it results in a household income distribution partly generated by allocation formulas and judgments by Bureau staff. Still, such a result is probably better than leaving large amounts of income uncounted.

41. STATISTICAL ABSTRACT OF THE UNITED STATES 1993, supra note 26, at 371, tbl. 583. The total of public aid for 1990 shown there is $211 billion, but I have excluded educational aid, social services, and job training funds from my total ($186 billion) because the latter services are not included in the market basket of goods typically defining the poverty standard.

42. BUREAU OF THE CENSUS, MEASURING THE EFFECT, supra note 4, at xvii-xix.

43. Id.
unassigned, and improvements in simulation and imputation techniques should help the situation over time.

The pattern of underreporting has a distinct relationship to the underground economy. As expected, households were least forthcoming if the transfer payments they received were conditioned by work or income limitations. The amounts reported for unemployment insurance, workers compensation, and AFDC were only 64%, 66%, and 59%, respectively, of the budgetary control totals (these percentages do not include imputations, which swell the final figures). As expected, self-reporting of Social Security income was higher—74% of the actual amount dispersed. Looking at earned income, the results were also predictable: the self-employed and the single proprietorships, having the greatest opportunities to operate in the informal economy, also reported low incomes compared to the benchmarks. The nonfarm self-employed sector reported 49% of the NIPA benchmark, and the farm self-employed sector reported 29%. In contrast, reports of wage and salary earnings totalled 78% of the NIPA benchmark.

This underreporting leads me to conclude that it will be difficult to get a clear picture of the poverty population using income figures alone, though improved imputation methods will help. But there is a simple remedy for some of the deficiencies of the income-poverty standard. By adding just two or three questions to the existing CPS, the poverty statistics could be made far more realistic, especially where underground income is the problem. For households reporting incomes below the poverty thresholds, the interviewer could ask (1) the household’s estimated monthly expenditures, and (2) the rental value of the house or apartment occupied. The interviewer could then ask the respondent to check one of a few broad intervals of net worth (below $50,000, $50,000 to $100,000, etc.). Since the three variables (rent, expenditures, net worth) are correlated with income and poverty status, we could, by using simple statistical cutoffs, determine the truly poor from the phantom poor. For example, households reporting a very low income but high expenditures, or a net worth of over $100,000, could be removed from the poverty count. This, along with other changes discussed above, would significantly improve the quality of our current poverty statistics and mitigate some of the distortions introduced by the underground economy.

44. BUREAU OF THE CENSUS, MONEY INCOME, supra note 38, at C-12, tbl. C-1, provides the percentages of independent estimates before and after the CPS imputes and edits the raw household data. 45. Id.