Social Security and the Fairness of the US Tax System

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Doi: 10.60154/jaepp.2023.v24n1p1

Submitted: 09 August 2023
Accepted: 16 September 2023
Published: 30 September 2023

Cite As:
Amlie T.T. & Gibney R.F. (2023). *Social Security and the Fairness of the US Tax System.* Journal of Accounting, Ethics & Public Policy, JAEPP, 24 (1), 1. https://doi.org/10.60154/jaepp.2023.v24n1p1

Abstract

There have been recurring arguments over time that taxes paid by wage earners for Social Security are regressive and hence unfair. The argument is further made that if these taxes are included in the calculation of the overall income tax burden, they make the income tax in the United States regressive (and hence unfair) as well. The purpose of this paper is to address both of those arguments: whether it is appropriate to combine it with the income tax when assessing progressivity, and whether the Social Security system itself is unfair. Much of the literature on taxation – popular, political, and academic – makes repeated references to whether a given tax structure is "fair" or not. Fairness in taxation, although never clearly defined on an objectively measurable basis, is generally thought to be based at least on a progressive tax structure. A critical question in the current discussion is whether this progressivity is in all cases "fair" and desirable, irrespective of the nature of the tax being imposed. This paper argues that combining general income taxes with Social Security taxes in order to assess the overall "fairness" of the tax structure is inappropriate and that the Social Security program imposes unfair taxes on some taxpayers.

Keywords: Social Security, taxation, tax system

Introduction:

There is substantial literature on the ethics of taxation, tax avoidance, and tax evasion. Most of the literature on the ethics of taxation and tax avoidance relies upon the implicit – and sometimes explicit – belief that "fair" is "ethical". Many papers make repeated statements regarding whether a tax burden is "fair" or not (e.g., approximately 30 references to "fair" or "fairness" in Payne and Raiborn (2018), as well as observations that tax avoidance is "avoiding one's fair share", without ever attempting to define "fair". For some (de Colle and Bennett (2014) among others) there appears to be a presumption that whatever tax is imposed is by definition "fair", and that therefore successful efforts to avoid taxes result in an "unfair" outcome. This somewhat authoritarian view of morality with respect to taxation in general, and social security in particular, is confirmed in Macdonald (2021) who finds that support for Social Security is significantly associated with authoritarian predispositions.

Compounding the difficulties in assessing the ethics of taxation is the belief that, according to Nichols and Wempe (2010), "The term "fair" may be a reasonable description of what is ethical". This simply takes one undefined term and defines it in terms of another undefined term; it leaves entirely unaddressed the question of what constitutes "fairness" in general and in the tax code in particular. As Bánfi (2015) notes, the differing interpretations of "fairness" "causes the principle of fairness to be meaningless in the case of a concrete tax." Aside from a general (but not universal) belief that taxes should be progressive, there is almost no agreement on the exact degree of progressivity which makes for a "fair" tax code. In the absence of a formally stated definition of fairness, it is presumably left as a matter of personal opinion, reminiscent of Justice Potter Stewarts's definition of pornography: "I know it when I see it". It will vary from one person to another at a specific time and is likely to vary with time for the same person. Unless carefully defined it seems almost counterproductive to try to make ethical arguments based on such a nebulous and undefined concept as "fairness".

There is a recurring literature that suggests that the Social Security tax is regressive and hence unfair, dating back to at least 1941 (Myrdal, 1941). This literature largely restricts its attention to the taxes imposed under the program and ignores the benefits side of Social Security. The classification as "regressive" is based upon the fact that Social Security taxes are imposed on earnings only up to some limit (e.g., Coronado, et al., 2000)., and that beyond that limit the marginal Social Security tax rate is zero The literature that looks at both the taxation and benefits sides of the Social Security program acknowledges that it is "questionable whether the attribute 'regressive' is appropriate" (Risenfeld, 1955).

There are also some (Nichols and Wempe (2010); Picketty and Saez (2007)) who argue that it is appropriate to evaluate the US income tax burden based on the combined burden of both Social Security and Federal Income taxes. Doing so can lead to the conclusion that the aggregate tax structure is regressive with respect to wage and salary income (Nichols and Wempe, 2010).

The purpose of this paper is to address two questions: whether it is appropriate to view Federal income taxes and Social Security taxes as a combined aggregate, and whether the Social Security system is in fact regressive. It is argued that considering the two taxes as a single burden is inappropriate due to the differing nature of the taxes and the benefits that they fund. Additionally, it is argued that the current Social Security system is in fact unfair in terms of the net expected burden borne by different groups of taxpayers.

The remainder of this paper is organized as follows: The first section includes a brief discussion of the two usual bases on which the justice of taxation is evaluated: "ability to pay" and "benefits received". This is followed with a discussion of income taxes versus social security taxes, and whether they are similar enough to justify combining into a single aggregate. Finally, a discussion of the fairness of the current Social Security tax is provided.

Ability to Pay versus Benefits Received

The definition of "fair" in the context of taxes is the subject of wide disagreement; even the criteria on which fairness is assessed vary. Some argue that the fairness of the tax structure is based on the taxpayer's ability to pay, with all of the redistributive implications inherent in that. Others believe in a more transactional approach, that it is unfair to extract payment without offering benefits, and that fairness will be based, in part at least, on a balancing of contributions versus benefits.

Under any meaningful definition of "fairness", "fairness" cannot be based solely on progressivity. Some argue that "progressive" tax rates are fair because progressive taxes are tied to a taxpayer's ability to pay: the greater a taxpayer's income, the more that person can afford to pay in taxes. That in isolation seems a rather questionable basis for defining fairness: "You were more productive and earned more money, therefore you have to surrender more". If "fairness" is simply dependent on the taxpayer's ability to pay, what is to stop almost confiscatory tax rates from being deemed "fair"? If the ability to pay is the only criterion for fairness, would it not be "fair" to attach the wealth of any wealthy person or entity – even a foreign citizen – who has the misfortune of having her assets come within reach of the US Treasury?

To sustain the veneer of fairness there must also be an assumption that the person who pays more benefits at least as much, if not more, from the taxpayer-provided goods. A former President, in arguing for higher tax rates, famously said to small business owners, "You didn't build that". The argument was that those business owners could only succeed because of the taxpayer-financed infrastructure, and they therefore should expect to pay taxes for the benefits that they received. They succeeded and had higher incomes due to taxpayer-financed infrastructure, and therefore they should pay more in taxes. Others have made similar claims, arguing that steep progressive tax rates were justified because those with higher incomes benefit more from the benefits provided by the government. The taxes fund the governmental apparatus that fosters the smooth functioning of society, and higher-income earners by definition get greater income from society. Essentially progressive taxation is justified on the dual basis of "ability to pay" as well as "benefits received".

Neither "ability to pay" nor "benefits received" is by itself tenable as a sole criterion for fairness. If someone receives no benefits whatsoever – direct or indirect – from the payment of taxes, then their ability to pay taxes does not make the extraction fair, and increasing the extraction based on increased resources does not make the questionably fair tax even fairer. By the same token, many general tax revenues go to fund benefits for the poorest among us. Requiring those who receive more benefits in the form of income housing food or medical subsidies to pay more based on "benefits received" is clearly counterproductive, and contrary to the intent of the benefits.

Income taxes versus Social Security taxes

General tax revenues (income taxes, property taxes, and sales taxes) are collected in order to provide for general governmental operations as well as income redistribution. These taxes aren't paid to underwrite specific spending programs, or in expectation of specific amounts of benefits to be received, nor are the benefits to be received by one individual contractually related to the amount that individual pays. By paying general income taxes taxpayers are funding the whole range of general governmental services; while they might not benefit from every governmental expenditure, in the aggregate they do receive benefits in the form of governmental services. While arguments can be made about the differing levels of benefits that different people enjoy from the smooth functioning of government, any attempts to measure such benefits would be arbitrary at best. For that reason, appeals to "fairness" in the case of general taxes generally hinge on the ability to pay: the taxpayers do receive benefits, but they are largely unquantifiable.

Other taxes or fees received by governments are tied to the benefits received by the taxpayer or the value of the government-provided resources that that taxpayer consumes. Motor vehicle fuel taxes (i.e., "gas taxes"), which are popularly thought to be earmarked for road maintenance and improvements, are based on the amount of fuel purchased, which is reasonably related to the amount of public road usage. Consumers pay excise taxes on alcohol, tobacco, tires, and other products in order to benefit from the use of the goods being purchased. User fees for any government-provided service (trash, water, parks, etc.) are tied to a specific benefit that the taxpayer receives. These taxes are generally not levied on an "ability to pay" basis but rather based on the benefits to be received, and most people agree that that is an appropriate path towards "fairness" for those taxes. There is, to the extent possible, a direct relationship between amounts paid and benefits received. In a fundamental sense, there is an exchange relationship where the taxpayer makes a contribution in consideration of being able to enjoy certain specific benefits.

Since the inception of Social Security in 1935, the law has provided for taxes to be paid based on the taxpayer's wage or salary earnings, and for benefits to be received to be based on those earnings as well. Workers are not entitled to any benefits at all unless they earn a specified number of credits, based on years of work and earnings. Similarly, "excess benefits" paid to recipients, and subject to recovery, are also defined based on the recipient's contribution to the system. Clearly, a relationship was established between "contributions" and "benefits received".

As the Social Security Administration notes on its website, "Social insurance, as conceived by President Roosevelt, would address the permanent problem of economic security for the elderly by creating a work-related, contributory system in which workers would ***provide for their own future economic security*** through taxes paid while employed." (emphasis added).

This presumed relationship between contributions and benefits is firmly fixed in the mind of the public. Whether in the case of politicians promising to protect "your" social security benefits, or putting "your" contributions in a lockbox and preventing commingling with general governmental revenues, the impression is fostered that by virtue of having paid into the system, workers are entitled to benefits. Similarly, there have been recurring calls to privatize social security, where social security taxes would be invested in individualized retirement accounts so that workers might potentially enjoy a greater income in retirement; such a program would clearly and directly link the taxes paid with the benefits received. The tying together of taxes paid and benefits received is illustrated by the Social

Security Administration itself when they discuss the cap on social security earnings: "We call this annual limit the contribution and benefit base."

Since general taxes (income, sales, and property taxes) are levied to fund general governmental expenditures and Social Security taxes are levied in order to provide specified benefits to retirees, it is inappropriate to combine them for purposes of assessing whether the combined taxes are "fair" or not. The only commonality between income taxes and social security taxes is that they are both levied – in part, in the case of income taxes – on wage income. They are levied for entirely different purposes, are treated as entirely separate on the books of the Federal government, and are viewed as fundamentally different by taxpayers. While a taxpayer, in contemplating her Federal income tax, might say "well, that's $5,000 I'll never see again", in the case of Social Security taxes there is some expectation that it is, in some sense, an investment in their retirement.

Again, as noted by the Social Security Administration, "The significance of the new social insurance program was that it sought to address the long-range problem of economic security for the aged through a contributory system in which the ***workers themselves contributed to their own future retirement benefit*** by making regular payments into a joint fund. ***It was thus distinct from the welfare benefits*** provided under Title I of the Act and from the various state "old-age pensions." Given the emphasis that the Social Security Administration places on the idea that Social Security is a system whereby "**workers would *provide for their own future economic security*** through taxes paid while employed", and that the Social Security Administration explicitly notes that it is separate from welfare benefits, it is difficult to argue that this was ever widely viewed as a means of redistributing income: workers were to provide for "their own" future economic security, not the economy security of others.

The distinction between general tax revenues, which might go towards income redistribution, and Social Security taxes (which go to fund one's own retirement), was acknowledged in Swan (1947): "To use only earmarked funds from payroll (sic) taxes and to relate contributions to benefits were undoubtedly necessary originally to obtain public acceptance".

The distinction between Social Security contributions and general taxes, with Social Security contributions being viewed as "in investment in one's own retirement", was anticipated by the National Insurance Contribution system in the UK. As noted in Peacock and Peden (2014), in 1911 the argument was put forth that "Insured workers paid weekly flat-rate NICs of 4d (1.67p);

their employers a 3d (1.25p); and the Exchequer 2d (0.8p) − hence Chancellor of the Exchequer Lloyd George's claim that workers would get 9d for 4d." Clearly, the system was promoted as one where contributions were expected to be returned (with interest) in the form of benefits.

Clearly, Social Security was intended to be separate and distinct, both in funding and in benefits, from general tax revenues and general governmental activities. Combining Social Security taxes with general income taxes and making claims about the overall degree of progressivity is clearly inappropriate.

Is the Social Security tax unfair?

Almost since its inception, there have been arguments over whether Social Security is regressive or progressive. The argument that it is regressive is based on the observation that Social Security taxes are levied on wages only up to some cap. For the 2022 tax year, the social security tax is applied only to the first $147,000 in wages. The tax is currently 6.2% of wages (imposed on both the employer and the employee, for a total of 12.4%). Because of this, ignoring any other income taxes, a person earning $10,000 or $100,000 per year would pay an average and marginal Social Security tax rate of 6.2%, whilst a person earning $1,000,000 per year would only pay Social Security taxes of $147,000 * 6.2% = $9,114, an average tax rate of less than 1%. The marginal rate on any income above $147,000 is zero. If we define "fair" as "progressive", (tenuous assumption #1) and measure the tax burden as taxes as a percentage of income (tenuous assumption #2), then clearly the current Social Security tax is unfair. Both in the interests of "fairness", and as a means to address projected funding shortfalls in the program, there have been repeated calls over the years to remove the cap on Social Security taxes so that all wage income is subject to the tax.

There are also many who acknowledge that Social Security when considered in terms of both the taxes and the benefits, is progressive. It is acknowledged that it serves partially as a means of redistributing income from high-income earners to low. There is copious research on the degree of progressivity, how it can or should be measured, and the degree to which mortality differentials (by education, race, socioeconomic status, etc.) impair the progressivity (Goldman and Orszag (2014), Nistico and Bevilacqua (2018), Coronado, et al. (2000)).

Since it is established that most people view social security retirement benefits as, to some extent, an exchange transaction, the question of whether social security taxes are "fair" or not is simply a matter of the taxpayer's "ability to pay". It must also, or perhaps exclusively, be based on

the question of whether the benefits received are directly proportional to the amounts contributed.

Social security benefits are based on a number of factors. A retiree must have 40 "credits" to qualify for benefits. Under current rules, one credit is earned for every $1,510 in earnings, up to 4 credits per year. Therefore, based on current standards, a person earning at least $6,040 per year for ten years would qualify for social security benefits. Alternatively, a person earning $1,510 per year for 40 years would likewise qualify for benefits.

Once a person has qualified for benefits, the calculation of the benefit is based on the retiree's "average indexed monthly earnings" for the worker's 35 highest-earning years. The more that has been earned, the more the worker has contributed in taxes, and the more they are entitled to at retirement. Since a worker's work history may span 40 or more years, it is important that earlier wages be indexed for inflation. Someone earning the "average" wage (as determined by the Social Security Administration) in 1980 would have earned $12,513.46; by 2020 the average wage had risen to $55,628.60. Using the average annual earnings calculated by the Social Security Administration, each worker's wages for each year are essentially indexed for the level of wage inflation. This indexing of wages (and hence contributions) is essentially a much more detailed analog of a defined benefit pension plan where benefits are based on some measure of the worker's end-of-career salary and reinforces the argument that social security benefits are meant to be tied to the worker's historic contributions to the plan.

Social Security retirement benefits are based on the worker's 35 highest-earning years of their career, with the wages indexed for inflation. Benefits for someone retiring at "full retirement age" are based on "average indexed monthly earnings", calculated based on the following steps:

- 90% of the first $1,024 of monthly earnings;
- 32% of any average monthly earnings above $1,024 but below $6,172;
- 15% of any average monthly earnings above $6,172 up to $12,250;
- 0% of any average monthly earnings above $12,250.

Clearly, the retirement benefits paid under Social Security are strongly decreasing relative to earnings. At lower income levels (i.e., below $1,024 per month or $12,288 per year) retirees with 40 credits receive retirement benefits equal to 90% of their average indexed monthly earnings (AIME). Someone with approximately "average" annual earnings of $55,000 ($4,583 per month) receives a benefit equal to 45% of their AIME. Someone at the "contribution and benefit base" limit of $147,000 annually ($12,250 per month) receives a monthly benefit equal to 28.4% of their

AIME. Earnings above $147,000 generate neither more social security tax burden nor additional retirement benefits.

Although social security taxes are arguably "regressive" (if defined based on the average or marginal Social Security tax rates above the wage cap), the benefits paid out behave in a similar fashion. As indicated previously, the benefits received, as a percentage of the amounts contributed, decrease drastically as earnings increase. Any attempt to illustrate the quantitative relationship between taxes and benefits will of course be dependent on assumptions made regarding the pattern of earnings, years of work, age at retirement, survivor's benefits, and years of retirement. What follows is based on the assumption that the workers work for 45 years and then live for 20 years beyond retirement. It is also assumed that each worker's earnings are and will be "static" on a real wage-index-adjusted basis. If the wage index rises by 10% over some period of time, it's assumed that wages for all income levels will rise by the same percentage and that benefits and the annual limit to the contribution and benefits base will rise by the same percentage as well.

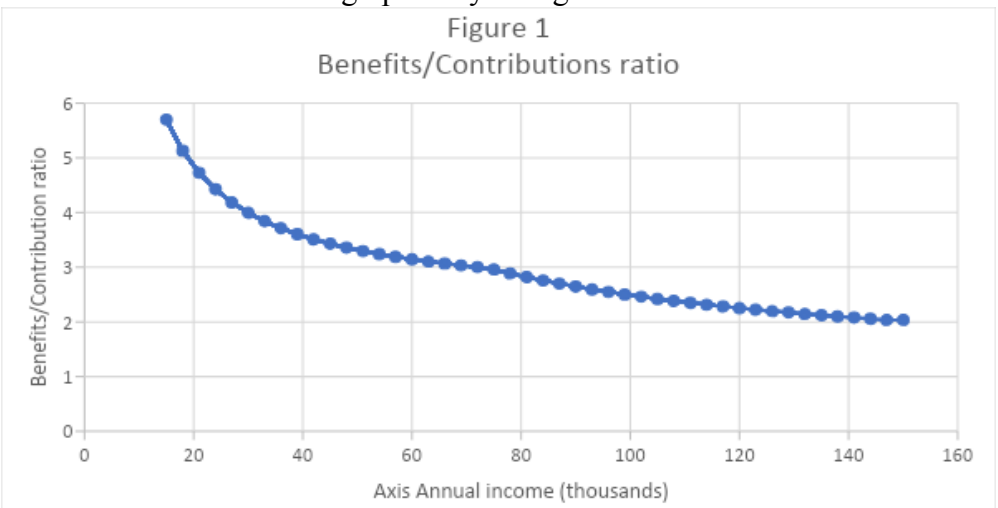
Table 1 provides information on the total contributions (over 45 years) made by individuals at different assumed income levels, relative to the benefits they receive (over 20 years). In terms of gross contributions and benefits (not accounting for the time value of money: interest and opportunity costs), wage-earners at the lower end of the income spectrum ($15,000 annually, approximately the Federal minimum wage for a full-time worker) receive $5.70 in benefits for every dollar contributed. A worker at the mean wage of $55,000 would receive approximately $3.22 for every dollar contributed, while a worker at the top of the taxable range ($147,000) would receive $2.04 for every dollar contributed.

Table 1			
Annual income	Total contributionn	Total benefits	Benefits per $ of contribution
15000	41,850	238,541	5.7
35000	97,650	366,541	3.75
55000	153,450	494,541	3.22
75000	209,250	619,358	2.96
95000	265,050	679,358	2.56
115000	320,850	739,358	2.30
135000	376,650	799,358	2.12
147000	410,130	835,358	2.04

Based on Table 1 it is clear that workers at the lower end of the salary range get a good deal more in benefits for every dollar they contribute to the system than do those at higher income levels. Simply looking at gross contributions and benefits, however, is not an adequate examination. If everyone is getting out more than they put in, whether 5.7 times as much or 2.04 times as much, that would seem to support Frederic Bastiat's observation in 1848 that "Government is that great fiction through which everybody endeavors to live at the expense of everybody else."

The relationship between contributions and benefits at different income levels can be seen graphically in Figure 1.

Figure 1
Benefits/Contributions ratio



In any sort of retirement or deferred income program, it is assumed that the contributions are invested in some income-producing assets. One of the justifications for Social Security is that it is on the order of a "mandatory retirement savings program". Individuals might not have the discipline and foresight to plan and save for their retirement, so they are forced to contribute to the Social Security system so that they are not destitute in their old age. Similarly, there is always the possibility that someone who plans and saves simply outlives their prudently budgeted retirement savings; social security provides a safety net for those people. The assumption (and reality) is that the "Social Security Trust Fund" (i.e., the undistributed assets) is invested in special governmental securities, where they earn a return to help finance the benefits paid out. If we assume that interest is accrued on the contributions that workers make to the Social Security system, how is the contribution versus benefit analysis impacted?

The Special Treasury Securities in the Old-Age and Survivors Insurance (OASI) trust fund currently earns an average of 2.337% annually. If workers' contributions were invested at 2.337% annually and paid out as a

monthly annuity for 20 years after retirement, the ratio of the current statutory benefit to the assumed annuity benefit, for different income levels, is as shown in Table 2.

Table 2			
Annual earnings	Social Security Benefit	Annuity if funds invested at 2.337%	SS Benefit as multiple of annuity
15000	993.92	386.26	2.57
35000	1527.25	901.27	1.69
55000	206059	1416.28	1.45
75000	2580.66	1931.28	1.34
95000	2830.66	2446.29	1.16
115000	3080.66	2961.30	1.04
135000	3330.66	3476.31	0.96
147000	3480.66	3785.32	0.92

A worker earning $15,000 per year (approximately the current minimum wage for a full-time worker) receives a social security benefit 2.57 times as large as would be his or her annuity if his or her social security taxes were invested at 2.337%. By the same token, for a worker at a wage cap of $147,000, the ratio of social security benefits to the 2.337% annuity is only 0.92.

It might be worth noting that the relationship between the values in the right-most columns of tables 1 and 2 is constant, no matter what rate of return is assumed; e.g., the "benefits per dollar contributed" is 2.798 times higher for the lowest-income earner as it is for the highest income earner, whether based simply on the nominal contributions in table 1, or on the assumption that funds are invested at 2.337% (or any other rate of return). The relative values are simply an artifact of the formula by which Social Security benefits are calculated.

One way in which the progressivity of Social Security taxes and benefits has been measured is through the Internal Rate of Return (IRR), which is the discount rate (or assumed rate of return) that equates the present value of the benefits received with the present value of the contributions. It is the rate at which, if the Social Security taxes were invested at that rate of return, would yield the statutory Social Security retirement benefits. A high (low) IRR suggests that the worker/retiree is earning a high (low) rate of return on their contributions.

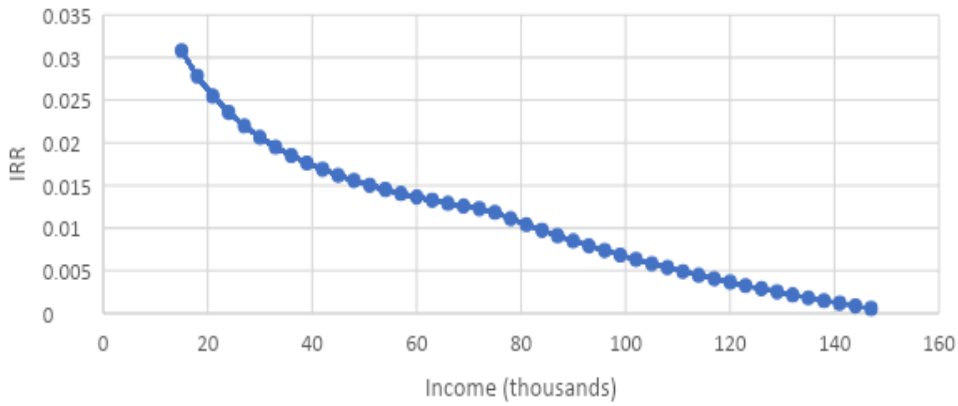
Table 3 shows the IRR for each of the income groups used in Tables 1 through 3. Social Security benefits received by workers at the lowest income level are consistent with investing their contributions at 5.00% annually, while for the highest income workers, the benefits are consistent with investing their contributions at 2.12%.

Table 3: IRR for Social Security contributions	
Annual income	IRR based on employee contributions
15,000	5.00%
35,000	3.85
55,000	3.43
75,000	3.19
95,000	2.78
115,000	2.48
135,000	2.24
147,000	2.12

An additional factor which might affect the view of the "fairness" of this exchange arrangement is the employer's matching contribution to the Social Security program. Social Security taxes are levied on both the employee and the employer, at the current rate of 6.2% on earnings up to $147,000 per annum. If we continue to view the Social Security tax as a contribution to the worker's retirement income, then it is appropriate to include both the employee and employer contribution associated with that employee's earnings. In the long run, additional costs levied on top of wages will tend to reduce wages. In the long run, an employee can at most be paid the value of her marginal product. If an employee is "worth" $50,000 per year to the employer, then the employer can and will pay, at most, $50,000 for that employee's services. In the absence of Social Security taxes, the employee would receive the full $50,000. If the employer must pay 6.2% as a tax on wages, then that employee's gross wages would have to fall to $47,081, with the remaining $2,919 representing the employer's share of the Social Security tax. In this sense, the "employer's share" of the social security tax is also borne by the employee, in the form of reduced wages.

If we calculate the internal rate of return (IRR) for the various income groups after including the employers' contribution, the picture is arguably even more unjust. With the reminder that these calculations hinge critically on expected working life and expected years of retirement, the IRR of benefits versus contributions are shown graphically in Figure 6.2.

Figure 2
Internal Rate of Return
(including employer contribution)



As can be seen in Figure 2, workers in the highest income bracket have an internal rate of return almost indistinguishable from zero. While those at the lower end of the income distribution enjoy a 3.08% return on their (and their employers') contributions, those at the higher end of the distribution have a return of only 0.0561%. Their nominal withdrawals from the social security program are barely more than the nominal contributions made in their names.

Social security taxes and benefits, rather than simply being a device for "forced retirement savings", have instead become an instrument of highly progressive income redistribution. According to the Social Security Administration, it was and is a "contributory system in which the workers themselves contributed to their own future retirement benefit"; there are no hints of or allusions to it being a device to take earnings from one worker and to divert them to another's benefit. Based on that it does seem appropriate to argue that the current Social Security system is grossly unfair, as it diverts earnings and savings from some workers to others.

Are Social Security benefits really that progressive?

There have been several arguments advanced that whilst Social Security benefits are highly progressive when viewed solely in the context of the benefits formula, when other factors are taken into account the progressivity of the benefits declines or is eliminated.

One argument that has been tendered is that some groups of retirees are likely to have longer retirements than others. If we speculate that people at the higher end of the income/contribution scale have systematically longer

lives and therefore periods of retirement than those at the lower end, the total benefits they receive will increase commensurately, and the benefits/contribution ratio might even out across income groups (Waldon (2007); Goldman and Orszag (2014)). Of course, it has also been noted that those at higher income levels are likely to work longer and defer taking benefits; this means they will be paying taxes for additional periods, while not receiving benefits (Haveman, et al, 2003). There is no a priori reason to expect the sum of any systematic differences between groups to have a specific predictable and material effect. Given the ratio of the "benefits received per dollar of contribution" for the lowest- and highest-income tiers (i.e., 2.798), it seems prima facie unreasonable to assume that retirees at the highest income level would have a retirement 2.798 times as long as those at the lowest income level.

There has been a substantial body of literature that attempts to measure the disparity in life expectancy between different groups caused by factors associated with membership in that group. Life expectancy has been investigated as it relates to education level, race, income, and socio-economic status. Similarly, investigations have been made regarding age at retirement for different groups, as well as the likelihood of taking Social Security benefits earlier rather than later, and the likelihood of continued employment (and hence the payment of taxes) later in life.

The values presented in Tables 1 through 3, and Figures 1 and 2, are based on a single common assumption across all income groups: a 45-year working life, with a 20-year retirement. Some researchers (Waldron (2007) have explored and attempted to predict the differential life expectancy at age 65 for different income groups. Others (Goldman and Orszag (2014)) have taken these projections and used them to estimate lifetime social security benefits for recipients of different income levels.

A key weakness of commonly cited studies of mortality differentials by income has been that the projected life expectancy – and hence expected social security benefits – has been based on extrapolations of earlier trends. If the change in mean life expectancy from the 1912 cohort to the 1922 cohort is an additional 2 years for the higher-income group, and an additional 0.5 years for the low-income group, it is assumed that this trend is maintained through all cohorts up to and including those born in 1990 (and that cohort hadn't even reached the age of majority at the time projections of life expectancy were made in 2007) (Waldron, 2007). The high-income group will have their life expectancy at 65 increase by 2 years every decade, while the low-income group will have theirs increase by 0.5 years every decade; the differential life expectancy increases by 1.5 years per decade. The result is that by the time projections are made for the 1990 cohort (which is 24 years old at the time of the Goldman and Orszag (2014) paper),

it is assumed that the high-income group will have a life expectancy of 13.1 years longer than the low-income group. These estimates are likely to exaggerate the actual extent of the difference, as they are based on extrapolating the trends observed through the mid-20th century. It seems reasonable to assume that advances in life expectancy are likely to increase at a decreasing rate as life expectancy approaches 80 years or more. The last data in the data series in Waldron was for the cohort born in 1927 (80 years old at the time of the Waldron (2007) paper); for that cohort, the lower-income group had a life expectancy at age 65 of 15.5 years, while the higher-income group had a life expectancy at age 65 of 18.5 years. This result, with a three-year discrepancy in life expectancy between high and low-income groups, is in line with findings from the Urban Institute (2006), which found that life expectancy at age 62 was 84 for the bottom income quintile and 86.1 for the top income quintile.

Based on aggregate measures, the mean retirement age for low-income workers tends to be slightly lower than the mean retirement age for higher-income workers. This is often attributed to lower-income workers having occupations that require more physical exertion, which can become more difficult as workers age. Similarly, as noted above, life expectancy for higher-income workers is marginally higher than for low-income workers. With these observations in mind, table 4 repeats the internal rate of return calculations based on a new set of assumptions.

Low-income workers; 45-year working life, 21-year retirement
High-income workers: 41-year working life, 22-year retirement

These assumptions are meant to reflect an assumption that a low-income worker starts work at 18, retires at 63, and lives until 84. The high-income worker starts working at 24 (after college and perhaps graduate school), retires at 65, and lives until 87. The benefits for the low-income retiree are appropriately reduced to reflect the "early retirement penalty" of 5/9 of 1% per month for every month for which the age at retirement is less than full retirement age.

Table 4: Internal rate of return under revised assumptions

Income group	Internal rate of return based on employee's contribution	Internal rate of return based on combined employee and employer contributions
$15,000	4.69%	3.18%
$147,000	2.78%	0.65%

Under these new assumptions there is still a redistribution of income from the higher income worker to the lower income worker, although the magnitude of the transfer has diminished.

Another demographic factor that is argued to negate some of the progressivity of Social Security benefits is the existence of spousal benefits. A spouse of a retiree is entitled to receive benefits equal to the greater of their own Social Security benefits or 50% of the retiree's benefits. Therefore a spouse who has never worked, and never contributed to Social Security, is able to receive benefit payments. It is argued that higher-income individuals are more likely to have a spouse who did not or does not work, and therefore the benefits received by those households are increased enough, relative to their Social Security contributions, to render the benefits structure regressive. (Kaygusuz (2015), Coronado, et al., (2000)).

Clearly, the system redistributes from single individuals and married couples where both parties work to single-earner couples. That redistribution takes place irrespective of the income levels involved. If one out of five high-income participants gains due to the spousal benefit, that does not have any bearing on the experience of the other four out of five high-income participants and doesn't negate the fact that the system has been structured to take part in their income and redistribute it to others.

Arguments surrounding differential life expectancy, retirement age, and the effects of spousal benefits conflate the fixed, formulaic relationship of wages, Social Security taxes, and benefits with the specific outcomes experienced by specific participants. The Social Security tax burden, combined with the formula by which benefits are computed, is designed to transfer income from high-income individuals to low-income individuals. The effect of spousal benefits, mortality, and age at retirement depends on the circumstances and choices of the individual participants; it is not a designed-in systematic difference between different income groups.

There are numerous characteristics on which the distribution of observed traits might differ between different income levels. Years of employment, years of retirement, early versus late retirement, extent of periods of unemployment, marital status, marital stability, single-income versus dual-income, and many other traits can affect the relationship between Social Security taxes paid and Social Security benefits received. Although the overall univariate distributions of these characteristics can be measured and compared across income groups, that provides no information about how each individual participant – or how the "average" participant – is affected by the multivariate combination of factors.

Any differential assumptions applied to different groups must be approached with extreme caution. While it may be observed that lower-income workers start working earlier (on average) and have shorter lives (on average) than high-income workers, it's also appropriate to note that unemployment is usually higher (and therefore taxes lower) among lower-income workers and that higher income workers will be more likely to have

their benefits reduced in proportion to their wages if they start taking benefits before attaining full retirement age while continuing to work. This highlights two problems with trying to apply different assumptions to different subpopulations. There are numerous factors that affect outcomes, and these factors often have conflicting or indeterminate effects. Just as importantly, the within-group variability with respect to these factors makes any aggregate "average" group assumption suspect.

As noted by McGee (1998), "The present social security system is based on the immoral principle of redistribution." It is a coercive system that is designed to systematically disadvantage some income groups for the benefit of others. In addition to the intended, designed-in systematic transfer of wealth from higher-income to lower-income participants, there are some equally unfair unintended consequences. Some groups (American Indians and Alaska Natives (AIAN), Blacks, and those at the extremely low end of the income spectrum) have lower life expectancies than other groups. They are therefore more likely to have little to no return on their contributions to the Social Security system and to have their contributions completely expropriated. Arguing that having two (non-exhaustive) subpopulations being expropriated in different fashions somehow makes the entire system "fair" is clearly a questionable conclusion.

Does viewing social security as "insurance" change the conclusions?

The Social Security tax is referred to as the "Federal Insurance Contributions Act" tax. Since the word "insurance" is in the title, one might ask whether viewing Social Security as an insurance vehicle would change any of the conclusions.

One of the advantages of social security is that the benefits have a cost of living allowance (COLA) feature, which protects against the risk of inflation reducing the real value of benefits. This means (in theory) that retiree benefits will be adjusted to compensate for inflation so that real benefit levels are maintained. Although this feature is also a part of some private-sector defined benefit pension plans, it is no longer commonly available as part of annuities offered by financial intermediaries in the United States. While this COLA feature makes social security more attractive than otherwise, since benefits at all levels garner the same COLA adjustment it does nothing to ameliorate the unjust reallocation of wealth from some workers to others.

The argument could be made that insurance is a mechanism whereby risk is pooled, and that there will naturally be some "winners" (those who receive more relative to their premiums) and "losers" (those who receive less relative to their premiums). That is clearly the case and is expected; the critical difference is that insurance premiums are based on the risk and

expected value of the benefit payouts; the premiums/payouts ratios do not vary on the basis of the insured's "ability to pay", or in a manner where some parties are deliberately put in a position of subsidizing others. Most people would not argue that it is "unfair" for a safe driver to pay lower insurance premiums than an "unsafe" driver for the same coverage; we know that the premiums are based on the expected value of the claims.

Another benefit of social security, and one which makes the "insurance" moniker seem appropriate, is that the program also pays out benefits for the entire life of the retiree and (in some cases) for a deceased retiree's dependents. This means there is no risk of "outliving your money". Again, this same protection applies to beneficiaries at all income levels, so it can't be argued that it represents a disparate benefit between different groups, and therefore can't be appealed to in order to justify disparate contribution/benefit relationships.

Conclusion

Given that Social Security taxes are paid in the expectation of, and in order to fund, specified retirement benefits it is unreasonable to combine them with general income tax payments in any assessment of the overall "fairness" of tax rates. Therefore any judgments passed on the "fairness" of the income tax structure, when based on the inclusion of Social Security taxes, are untenable.

Perceptions of the fairness of general income taxes might arguably be based on the degree of progressivity (whether taxes as a percentage of total income, or marginal tax rates at different income levels), but that is not the case with Social Security taxes. According to the Social Security Administration, the Social Security program's purpose is to create a "contributory system in which workers would ***provide for their own future economic security***"; no explicit mention is made of it being a vehicl e by which income is to be redistributed, and there is no a priori moral or ethical reason to assume that redistribution should be part of the social security system. On the contrary, Social Security taxes are paid in expectation of specified future benefits to be received, and "fairness" would be based on the commensurability of the taxes paid with the benefits received. It has been shown that there is a significant disparity between taxes paid and benefits received across different income levels, where those at higher income levels receive substantially less – relative to their contributions – than those at lower income levels. This finding is confirmed under varying assumptions regarding the working (taxpaying) life and life expectancy of workers in different income groups. Therefore the conclusion must be that the current Social Security system is unfair, but not in the

manner usually expressed: it is unfair to higher-wage workers, who end up underwriting the retirement benefits of lower-wage workers.

Conflict of Interest: The authors declared no conflict of interest.

Funding Statement: The authors did not obtain funding for this research.

Data availability: The data are available in the content of the manuscript.

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