



## WAGE TAXATION AND PUBLIC HEALTH

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### ABSTRACT

*The structure of a tax system is relevant to public health. Wage taxes are the predominant form of taxation in both Europe and the United States. Yet, high rates of wage taxation harm worker health, particularly when wage taxes are part of an overall regressive tax system. The causal mechanisms for the negative effects of wage taxes on public health occur by (1) pushing marginal workers into absolute poverty by payment of wage taxes; (2) increasing working hours for low-wage workers; (3) increasing levels of economic inequality by relatively higher tax and audit rates of persons with labor income; and (4) reducing financial (and time) investment in children by overburdened workers. Optimal tax policy accordingly requires an evaluation of the cost of wage taxes levied on “health capital” of workers as well as financial capital.*

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## I. INTRODUCTION

Wage taxes reduce the after-tax earnings of working persons.<sup>1</sup> Wage taxes are levied at relatively high rates, and comprise a substantial portion of overall tax collections in Europe and the United States.<sup>2</sup> The levy of such taxes on workers is relevant to health policy particularly if worker finances bear a causal relation to public health.<sup>3</sup> The causal mechanisms for an effect of wage taxation on public health proposed in this paper are as follows: First, high rates of taxation of the working poor actually *cause* incremental poverty

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<sup>1</sup> The incidence of wage taxation is generally presumed to be borne by workers in the economic theory of taxation. See CONG. BUDGET OFF., EFFECTIVE MARGINAL TAX RATES ON LABOR INCOME (2005), <https://www.cbo.gov/sites/default/files/109thcongress20052006/reports/11-10-labortaxation.pdf>; JOINT COMM. ON TAX'N, *Overview of Present Law and Economic Analysis Relating to Marginal Tax Rates and the President's Individual Income Tax Rate Proposals*, JCX-6-01 (2001); John A. Brittain, *The Incidence of Social Security Payroll Taxes*, 61 AM. ECON. REV. 110 (1971). See also Jonathan Gruber, *Health Insurance and the Labor Market* (NBER Working Paper Series, Working Paper No. 6762, 1998) (indicating employer-paid health insurance costs reduce wages directly).

<sup>2</sup> INTERNAL REVENUE SERVICE, SOI TAX STATS – COLLECTIONS AND REFUNDS BY TYPE OF TAX, FISCAL YEARS 1995-2014, <https://www.irs.gov/uac/SOI-Tax-Stats-Collections-and-Refunds,-by-Type-of-Tax-IRS-Data-Book-Table-1> (last updated Mar. 30, 2016). See Cécile Remeur, *Tax Policy in the EU: Issues and Challenges*, EUR. PARLIAMENTARY RES. SERV. (2015). In the United States, employment tax withholdings comprise 31.9% of total federal receipts, while individual income tax withholdings comprise 38.2%—combined net, this is 70.1% of federal tax receipts. OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, BUDGET OF THE U.S. GOVERNMENT FISCAL YEAR 2015 HISTORICAL TABLES, GPO, <https://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/hist.pdf>. In the European Union, tax receipts are reported in the categories of capital, labor and consumption taxes, where capital comprises 20.8% of the total. *Id.* The total tax burden on workers in the EU accordingly depends in significant part on the incidence of the VAT. See Remeur, at 7. The OECD refers to VAT as part of “consumption taxes;” OECD, REVENUE STATISTICS 2015, <http://www.oecd.org/ctp/tax-policy/revenue-statistics-19963726.htm>.

<sup>3</sup> See George Kaplan & John Lynch, *Is Economic Policy Health Policy?* 91 AM. J. PUB. HEALTH 351, 352 (2001); Michaela Benzeval et al., *Evidence on the Relationship between Low Income and Poor Health: Is the Government Doing Enough?* 21 FISCAL STUD. 375, 377 (2000); see also Enrique Regidor, *Social Determinants of Health: A Veil that Hides Socioeconomic Position and its Relation with Health*, 60 J. EPIDEMIOLOG. HEALTH 896 (2006).

by reducing the after-tax earnings of working persons, thereby resulting in some workers falling below the poverty line.<sup>4</sup> Absolute poverty is widely believed to *cause* negative health outcomes.<sup>5</sup> Second, wage taxation may often *increase* labor supply among the working poor.<sup>6</sup> An example is where a low-

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<sup>4</sup> The overall tax system is regressive taking into account all taxes (i.e., not just federal income taxes) as the working poor pay significant amounts of net wage and other taxes. Low-income persons begin to pay wage taxes on the first dollar of earnings since employment taxes are a flat-rate levy; refundable income tax credits are generally not sufficient to offset solely wage tax remittances, even if successfully claimed by the taxpayer. Also, the other taxes paid by low-income persons, such as sales, excise, property, etc., are proportionately greater than taxes paid by high-income persons, resulting in a relatively higher effective tax rate for lowest income persons taking into account all tax credits and other offsets. See Bret N. Bogenschneider, *The Effective Tax Rate of U.S. Persons by Income Level*, 145 TAX NOTES 117 (2014).

<sup>5</sup> See Andrew Leigh et al., *Health and Economic Inequality*, 1 THE OXFORD HANDBOOK OF ECON. INEQUALITY 3, 4 (2009) (“There is a strong negative relationship between health and absolute poverty and this may also hold for relative poverty. . . . Even in rich countries high levels of inequality are not invariably linked to high levels of poverty, although the two measures are in most cases strongly correlated.”) (extensive citations omitted); see also SOCIAL DETERMINANTS OF HEALTH: THE SOLID FACTS 10, 16 (Richard Wilkinson et al. eds., 2d ed. 2003)

(Relative poverty means being much poorer than most people in society and is often defined as living on less than 60% of the national median income. It denies people access to decent housing, education, transport and other factors vital to full participation in life. . . . The stresses of living in poverty and particularly harmful during pregnancy, to babies, children and old people.)

<sup>6</sup> After-tax income may be taken as akin to a “Giffen good” where wage taxes levied on very low wages may result in more low pay work, not less. See Bret N. Bogenschneider & Ruth Heilmeier, *Income Elasticity and Inequality*, 5 INTERDISC. J. ECON. & BUS. L. 34 (2016)

([F]or ‘lower’-income taxpayers (on a fixed budget) after-tax income might be understood as a ‘Giffen’-type commodity, meaning that as income tax rates are increased, lower-income taxpayers may tend to work more, not less, in order to make ends meet. Second, wealthy taxpayers enjoy primarily investment income and cannot choose to work less if tax rates are increased reflecting an elasticity measure of  $\epsilon=1$ .);

income person works multiple, low-paying, jobs to make ends meet. Labor provided under such conditions may be reasonably inferred to *cause* negative health outcomes.<sup>7</sup> Third, regressive tax policies directly *cause* economic inequality.<sup>8</sup> At least in the United States, economic inequality appears to be highly correlated with poor health.<sup>9</sup> Several econometric studies have questioned the correlation outside the United States in comparison to countries with universal healthcare systems, such as Canada and Sweden.<sup>10</sup> The confusion on this issue may result

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*but see* Martin Feldstein, *The Effect of Marginal Tax Rates on Taxable Income: A Panel Study of the 1986 Tax Reform Act*, 103 J. POL. ECON. 551, 553 (1995).

<sup>7</sup> See JANET CURRIE & BRIGITTE C. MADRIAN, *Health, Health Insurance and the Labor Market*, in 3 HANDBOOK OF LAB. 3309, 3312 (O. Ashenfelter et al. eds., 1999) (“An additional possibility is that wages and labor market activity have a direct effect on health. There is a large literature examining the effects of labor market activity on health, some of which is surveyed in Ruhm (1996).”); BETH SHULMAN, *THE BETRAYAL OF WORK: HOW LOW-WAGE JOBS FAIL 30 MILLION AMERICANS AND THEIR FAMILIES* 98 (2003). See also Christopher Ruhm, *Are Recessions Good for Your Health?* 115 QUART. J. ECON. 617 (2000); Xin Xu & Robert Kaestner, *The Business Cycle and Health Behaviors* (J. Soc. Sci. & Med., Working Paper No. 15737, 2010).

<sup>8</sup> Bret N. Bogenschneider, *Income Inequality and Regressive Taxation in the United States*, 3 INTERDISC. J. ECON. & BUS. L. 8 (2015)

(In recent decades the United States has been plagued by increasing levels of economic inequality. Such increase in economic inequality was posited to relate to excess compensation paid to corporate executives. This article asserts that, to the contrary, the observed increase in economic inequality is due, in part, to regressive tax policies in the United States. Income inequality is further shown to have been significantly underreported by the failure to account for unrealized income on capital assets held by the wealthy.).

<sup>9</sup> See Ulf Gerdtham & Magnus Johannesson, *Absolute Income, Relative Income, Income Inequality and Mortality*, 39 J. HUMAN RES. 228 (2004); Ken Judge & Iain Paterson, *Poverty, Income Inequality and Health* (New Zealand Treasury Working Paper, No. 01/29, 2001), <http://www.treasury.govt.nz/publications/research-policy/wp/2001/01-29/twp01-29.pdf>.

<sup>10</sup> Kaplan & Lynch, *supra* note 3, at 352

([T]he relationship for Canadian areas did not lie on the same curve as is found in the United States, suggesting that it was not only the lower levels of inequality that were

in part from an application of empirical methods without considering auxiliary hypotheses to the general theory. For example, economic inequality may cause negative health outcomes simply by limiting healthcare access for working families who cannot afford to purchase private health insurance at a given price level. This appears to be the case under the Obamacare private health exchanges, for example.<sup>11</sup> Since the United States is one of the only OECD nations without a comprehensive national health insurance scheme, a relation between health insurance costs and access to care would only be an issue in the United States. Finally, wage taxes reduce the disposable income of working families.<sup>12</sup> Families are the primary means to channel economic investment into children;<sup>13</sup> and, substantial empirical evidence indicates economic investment bears a causal relation to child health outcomes.<sup>14</sup>

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important but that there were other mechanisms that buffered the impact of income inequality on health. We are not sure of what these other mechanisms are . . . [perhaps] a tax and transfer system that supports more extensive education, public health, and social services programs in Canada.).

<sup>11</sup> The price of health insurance policies even on the Obamacare healthcare exchanges varies widely by region and may not be affordable to low income workers in many areas of the United States. See Bret Bogenschneider, *The Obamacare Failure-to-File Problem*, 148 TAX NOTES 1535 (2015).

<sup>12</sup> See Bret Bogenschneider & Karen Bogenschneider, *An Evidence-Based Approach to Family in Tax Policy*, 51 GONZ. L. REV. 1 (2016).

<sup>13</sup> See June Carbone, *Unpacking Inequality and Class: Family, Gender and the Reconstruction of Class Barriers*, 45 NEW ENG. L. REV. 527 (2011); see also Martha Bailey, *Fifty Years of Family Planning: New Evidence on the Long-Run Effects of Increasing Access to Contraception*, BROOKINGS PAPERS ON ECON. ACTIVITY 341, 354-55 (2013) (“Any increases in household income would tend to increase further parental investment in their children. . . . To the extent family planning increases parental investment in children, it may improve their lifetime opportunities and labor market outcomes as adults.”). For helpful background on children and applicable tax incentives see, Lawrence Zelenak, *Children and the Income Tax*, 49 TAX L. REV. 349 (1994).

<sup>14</sup> Neal Halfon et al., *The Changing Nature of Children’s Health Development: New Challenges Require Major Policy Solutions*, 33 HEALTH AFF. 2116 (2014), <http://content.healthaffairs.org/content/33/12/2116>. See Hirokazu Yoshikawa et al., *The Effects of Poverty on the Mental, Emotional, and Behavioral Health of Children and Youth: Implications for Protection*, 67 AM. PSYCHOL. 272 (2012); Joseph E. Balog, *Economic Disruption and*

The health effects of wage taxation to workers and their families are particularly important where public funds are also spent on the healthcare of these same persons. Simply put, the net wage collections are wage tax levies *minus* incremental public health expenditures for workers actually caused by high rates of wage taxation. The extent of a negative relation of wage taxation on worker health accordingly has major implications for public policy. The World Health Organization published a book on this subject: *Social Determinants of Health*,<sup>15</sup> but no mention was made of the relevance of worker taxation to health outcomes. The current tax system in most countries is designed to increase the returns to capital by avoiding taxing capital because it is purportedly mobile.<sup>16</sup> The pertinent question of public economics then, is whether an economic system premised on the heavy taxation of labor is an optimal design. Prior research in economic theory is based on a presumed zero-cost/benefit analysis of wage taxation; however, under plausible scenarios (in other words, *real* pre-tax wages at or near subsistence level) the taking of money from working persons by high rates of wage taxation might actually create more problems for society than it solves. Prior empirical research in the field of public health has focused simply on the correlation between

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*Childhood Obesity: Distraction, Disconnection, Displacement of Children's Health, and a Need for Social Change*, 42 J. HEALTH ED. & BEHAV. 67S (2015); Marilyn Metzler et al., A CONCEPTUAL FRAMEWORK FOR EXPLORING THE SOCIAL DETERMINANTS OF CHILD MALTREATMENT, IN CHILD MALTREATMENT: SOCIAL DETERMINANTS OF HEALTH, ch. 4 (citing ANDREA SEDLAK ET AL., U.S. DEP'T OF HEALTH AND HUMAN SERVS., ADMIN. FOR CHILDREN AND FAMILIES, FOURTH NATIONAL INCIDENCE STUDY OF CHILD ABUSE AND NEGLECT (NIS-4): REPORT TO CONG., EXEC. SUMMARY (2010)).

<sup>15</sup> See Leigh et al., *supra* note 5.

<sup>16</sup> See Arnold C. Harberger, *The Incidence of the Corporation Income Tax*, 70 J. POL. ECON. 215 (1962); Arnold C. Harberger, *Tax Policy in a Small, Open Developing Economy*, THE ECON. OF THE CARIBBEAN BASIN 1, 3 (Connolly ed., 1985); John Mutti & Harry Grubert, *The Taxation of Capital Income in an Open Economy: The Importance of Resident-Nonresident Tax Treatment*, 27 J. POL. ECON. 291 (1985). For the extension of the "small open economy" model beyond the small open economy context see Lans Bovenberg, *Capital Income Taxation in Growing Open Economies*, 31 J. POL. ECON. 347 (1986). See Anne Sibert, *Taxing Capital in a Large, Open Economy*, 41 J. POL. ECON. 297 (1990); see also Alan Auerbach, *Who Bears the Corporate Tax: A Review of What We Know*, 20 TAX POL. & ECON. 1 (2006).

economic inequality and health with the idea of using welfare payments to offset potential negative health outcomes. The public policy issue might then be more precisely stated as whether the negative health effects inflicted upon workers and their families by high rates of wage taxation are offset, in part by the redistribution of amounts levied to other persons.<sup>17</sup>

Tax policymakers seem to be aware of the negative aspects of high levels of wage taxation. Tax expenditure provisions such as, personal exemptions for children, child tax credit, or, the earned income tax credit, are often used to offset taxes levied on the working poor and families. However, tax expenditure provisions for working persons represent only partial offsets against wage taxes or other taxes. Wage taxes are generally larger in gross amount even where a taxpayer receives a refundable earned income tax credit, for example.<sup>18</sup> The oft-given counter is an averment to lifetime benefit measures for workers (in other words, Medicare or social security payouts) which offset some of the costs.<sup>19</sup> However, this lifetime netting idea is a tax equity argument and does not mitigate the current health costs of wage taxation to workers today.<sup>20</sup> If money is fungible, tax expenditure provisions are an offset that could be

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<sup>17</sup> Frank Ramsey, *A Contribution to the Theory of Taxation*, 37 *ECON. J.* 47 (1927) (“The effect of taxation is to transfer income in the first place from individuals to the State and then, in part, back again to rentiers and pensioners.”).

<sup>18</sup> See Lawrence Zelenak, *Redesigning the Earned Income Tax Credit as a Family-Size Adjustment to the Minimum Wage*, 57 *TAX L. REV.* 301 (2004).

<sup>19</sup> Lawrence Zelenak, *Tax Policy and Personal Identity over Time*, 62 *TAX L. REV.* 333, 345 (2007)

(Tax policy analysts commonly assume that the ideal method of measuring tax burdens, for purposes of determining whether the distribution of burdens comports with notions of horizontal and vertical equity, is to consider the total tax burdens imposed on different individuals over their entire adult lifetimes. This view is especially popular among public finance economists; it is less frequently espoused by tax lawyers and legal academics.).

<sup>20</sup> See THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE, *THE GROWING GAP IN LIFE EXPECTANCY BY INCOME: IMPLICATIONS FOR FEDERAL PROGRAMS AND POLICY RESPONSES* (2015).

obtained simply by reducing the rate of wage taxation. Such expenditure provisions are highly visible on the tax return filing and are designed to show the government is ostensibly helping when in fact the wage tax system caused the problem, which it then sets out to alleviate. Tax expenditure provisions are solely stop-gap measures taken to alleviate some of the human suffering caused by high rates of wage taxation. The Internal Revenue Service has also begun to hyper-aggressively audit low income persons who claim an earned income tax credit pursuant to a Congressional mandate<sup>21</sup> resulting in approximately 461,000 low-income audits per year despite very little associated tax collections.<sup>22</sup> As tax attorneys can attest, audits tend to cause significant stress on the subject taxpayer, so the IRS' aggressive audit practices against workers imports substantial health costs on low-income taxpayers.

The progressivity of Federal statutory tax rates does not render the overall tax system progressive. In actual fact, the overall tax system is regressive when all taxes are taken into account.<sup>23</sup> The “tax” versus “fee” labels placed upon tax levies by the various taxing authorities including the federal, state and local governments which also levy taxes on the working poor, are not determinative of the economic effect to low-income persons.<sup>24</sup> In terms of public policy, “wage taxes” should be taken to mean all forms of taxes, fees, or other mandatory

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<sup>21</sup> See Leslie Book, *EITC Noncompliance: What We Don't Know Can Hurt Them*, 99 TAX NOTES 1821 (2003).

<sup>22</sup> See Bret N. Bogenschneider, *Foucault and Tax Jurisprudence: On the Creation of a “Delinquent” Class of Taxpayer*, 8 WASH. U. JURIS. REV. 59, 60 (2015).

<sup>23</sup> See Bret N. Bogenschneider, *Critical Legal Studies and Regressive Taxation in the United States*, 10 HARV. J. LEGAL L. 98 (2015).

<sup>24</sup> Bogenschneider, *supra* note 4, at 117 (“The U.S. Supreme Court held that the individual mandate was to be considered a ‘tax’ for U.S. law purposes.”) (citing *Nat'l Fed'n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566 (2012)). Similarly, under the Organisation for Economic Co-operation and Development's guidelines, any self-paid education costs may technically be considered a tax under the international legal framework for tax reporting if education is considered to be paid more typically by the government than individuals. OECD: REVENUE STATISTICS OF OECD COUNTRIES: COMPARATIVE TABLES (1965-2014), <https://stats.oecd.org/Index.aspx?DataSetCode=REV>.



assessments paid by necessity by working persons directly from the proceeds of work. This approach invalidates most of the various claims in the economic literature and popular media that low income persons do not pay significant amounts of taxes. Furthermore, although the mathematical details are beyond the scope of this paper, the Congressional Budget Office calculation of effective tax rates is flawed because it imputes corporate tax remittances into the numerator of an effective tax rate equation without also imputing the respective income upon which such taxes were levied into the denominator.<sup>25</sup> Furthermore, excise taxes may indeed be paid by large corporations, but the incidence of the tax falls on consumers because the excise tax is built into the price of gasoline, for example. Also, the Tax Policy Center calculations are flawed with respect to low-income persons because such persons are presumed to claim all tax benefits to which they are eligible, but many otherwise eligible low-income taxpayers do not file tax returns at all. Finally, the calculations of net employment taxes paid by the wealthy as presented by the Tax Policy Center do not match to the data reported by the National Academies of Science (NAS) on the ratio of social security/Medicare pay-outs versus tax pay-ins. According to the NAS, any progressive effect within the programs is offset by the much longer lifespans of higher income persons given there is no means testing for benefits apart from Medicaid.<sup>26</sup> The lack of means testing on benefits undermines confidence in the fiscal soundness of the social security system amongst younger workers. Wage taxes should therefore be expected to have similar elasticity as taxable income generally with a corresponding deadweight loss from the levy of wage taxes.<sup>27</sup>

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<sup>25</sup> See Bret N. Bogenschneider, *How Helpful is Econometrics to Tax Research?* 22 N.Z. J. TAX L. & POL'Y 1 (2016) ("By including only the corporate taxes payable (that is, the numerator in an effective tax rate calculation) but excluding the matching income (i.e., the denominator in an effective tax rate calculation) the CBO erred as a tax technical matter").

<sup>26</sup> THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE, *supra* note 20, at 78 ("In essence, the progressive effect of the Social Security benefit formula is largely undone by the fact that low-SES groups have lower life expectancies and so receive fewer years of benefits, on average.").

<sup>27</sup> See Martin Feldstein, *Tax Avoidance and The Deadweight Loss of the Income Tax* (Nat'l Bureau of Econ. Research, Working Paper No. 5055, 1995).

A few other issues within the literature on inequality and public health are notable as an introductory matter. First, empirical research has shown that employed persons are generally in better health than unemployed persons, particularly in the United States. So, perhaps the hypothesis ought to be that wage taxes actually improve health because wage taxes only arise in the context of employment. However, given the absence of universal healthcare access in the United States, a link between employment and good health does not invalidate the auxiliary hypothesis proposed here. That is, if a worker is employed in a position without health coverage or subject to substantial copays, it is entirely plausible that wage taxes could be harmful to public health because of lack of access to care even where, in other cases, employment is positively correlated with health. Second, a great deal of economic research has focused on the controversial question of whether income inequality alone *causes* negative health outcomes or whether the observed correlation is spurious. A variety of empirical studies assert that the causal direction of the underlying correlation is unknown and potentially unknowable.<sup>28</sup> However, absolute poverty is thought to cause negative health outcomes. So, if wage taxes contribute to poverty, then it might actually be surprising if wage taxes did not cause negative health outcomes;<sup>29</sup> the default

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<sup>28</sup> See, e.g., Regidor, *supra* note 3, at 898 (“However, these authors are also victims of a conceptual overlap when they mention certain factors – poverty, unemployment, education, or living conditions – as examples of both social determinants and indicators of socioeconomic position.”); Judge & Paterson, *supra* note 9, at 39 (“Wagstaff and van Doorslaer (2000) make the very important point that ‘a large number of studies have been undertaken that . . . appear to be incapable of shedding any light on the effects of relative income and income inequality on individual health.’”) (citing A. Wagstaff & E. van Doorslaer, *Income Inequality and Health: What does the Literature Tell Us?* 21 ANN. REV. OF PUB. HEALTH 565 (2000)).

<sup>29</sup> See John Mullahy et al., *Health, Income, and Inequality: Review and Redirection*, Wisconsin Russell Sage Working Group, 4 (2003), <https://www.russellsage.org/sites/all/files/u4/Mullahy%20et%20al.pdf>

(A related concept is the *absolute deprivation or poverty hypothesis*. According to this hypothesis, those with the lowest incomes face poorer health and greater risk of mortality owing to a variety of factors associated with extreme poverty, such as inadequate nutrition, lack of quality health care, exposure to a variety of physical hazards, and heightened stress.)

idea ought to be that wage taxes are harmful to public health to some degree even if other factors such as race or geography are also relevant.<sup>30</sup> A clear disconnect seems to arise on the question of causation, and accordingly, a subsequent section of this paper is devoted specifically to an analysis of cause-and-effect in the social sciences.

## II. IS TAX POLICY HEALTH POLICY?

Many public health experts agree that economic policy is relevant to health policy.<sup>31</sup> If wage taxes have negative public health implications for workers, and capital or other forms of taxation do not, this may have significant implications for the choice of a tax system. However, in a WHO working paper William Savedoff argued that tax structure, including in particular the regressivity or progressivity of respective tax systems was not a relevant issue for health policy.<sup>32</sup> Savedoff wrote:

Despite theoretical debates over the merits of consumption versus income taxes, national versus

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<sup>30</sup> *Id.* at 52

([E]specially in the USA, [the correlation] is a by-product of two factors. First, the non-linear relationship between individual income and health, which means that poverty is strongly associated with adverse health outcomes. Secondly, the fact that income inequality may act as a marker for other area characteristics such as ethnicity or the extent of social welfare infrastructure that do influence health.)

<sup>31</sup> See Mullahy et al., *supra* note 29, at 3

(The basic idea that income is associated with health goes back a long way in the literature, though perhaps the most influential work affecting contemporary work in this area is by Preston (1975), who observed that the impact of additional income on health (as measured by mortality) is greater on those with low income than those with higher income.)

(citations omitted).

<sup>32</sup> William Savedoff, *Tax-Based Financing for Health Systems: Options and Experiences*, WHO (Discussion Paper No. 4, 2004).

local, and earmarked versus general, the best guidance for tax policy is to focus on very pragmatic questions. Taxes should be raised keeping in mind the costs of tax administration, tax distortions in economy, and the politics of allocations (in the case of set-asides and earmarking). The net equity of health system financing depends more on the amount of funds that the tax system mobilizes and the way in which it is spent, than on the progressivity or regressivity of the taxes themselves.<sup>33</sup>

The thesis of this paper is just the opposite: the structure of the overall tax system is highly relevant to health outcomes. Various empirical studies indicate the importance of macroeconomic conditions to health of which wage taxation may be one macroeconomic factor. For example, where working hours *decrease* because of a recession, the health of workers measurably *improves*.<sup>34</sup> Here, technically the inverse causal relation is proposed where if working hours *increase*, health outcomes would be expected to *decline*. A similar problem was encountered in the study of the elasticity of taxable income. In a seminal paper, Martin Feldstein posited economic effects by moving both ways along an elasticity function according to the slope coefficient; hence, the same methodology could be reasonably applied here.<sup>35</sup> Feldstein also took employment decisions as trading work for leisure time.<sup>36</sup> But, for many young people the idea of “leisure time” is elusive. To take an obvious example, if a young couple holds four or more jobs (or, two jobs with long hours)<sup>37</sup> they may choose to purchase daycare

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<sup>33</sup> *Id.* at 17.

<sup>34</sup> See Ruhm, *supra* note 7; Xu & Kaestner, *supra* note 7; see also Erdal Tekin et al., *Health and Health Behaviors during the Worst of Times: Evidence from the Great Recession*, INST. FOR THE STUDY OF LABOR (Discussion Paper No. 7538, 2013).

<sup>35</sup> See Martin Feldstein, *Tax Avoidance and the Deadweight Loss of the Income Tax*, 81 REV. OF ECON. & STAT. 674 (1999).

<sup>36</sup> Feldstein, *supra* note 6, at 562.

<sup>37</sup> See PAUL R. AMATO ET AL., *ALONE TOGETHER: HOW MARRIAGE IN AMERICA IS CHANGING* 79, 139 (2007)

with earnings from work or not to have children at all.<sup>38</sup> This entails a real economic cost.<sup>39</sup> The economic concept of “leisure time” is just formally refusing to count non-working hours as having measureable economic value for parents and children in particular. Much of the empirical research in the field of family policy shows that devaluing of investment in children is a major mistake within economic theory.<sup>40</sup>

Recent economic developments in the United States have rendered wage taxation of relatively greater importance to public policy than may previously have been the case. Real wage rates appear to be on the decline, thereby decreasing the disposable income of workers.<sup>41</sup> In the situation where work yields less real proceeds, the overall regressivity of the tax system becomes relatively more important to public policy, even if the rate of wage taxation remained constant. But, the

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(Dual-earner arrangements are linked with positive marital quality among middle-class couples and with negative marital quality among working-class couples. Although the additional income provided by working-class wives helps . . . their families, these financial benefits come with a steep price in the form of greater marital tension, low job satisfaction, and a desire . . . to decrease hours of employment or return to homemaking.).

<sup>38</sup> Halfon et al., *supra* note 14, at 2118 (“Childrearing pressures and resource constraints are being felt across the full income spectrum, as more families are squeezed for time, and many struggle to afford high-quality services such as preschool, child care, and after-school care, not to mention behavioral health care.”).

<sup>39</sup> *Id.* at 2118 (“Recent studies also show that families are spending more on child-rearing services, with growing gaps between lower- and higher-income families, and costs are projected to dramatically increase over the next decade.”).

<sup>40</sup> See Ron Haskins, *Opportunity, Responsibility and Security: A Consensus Plan for Reducing Poverty and Restoring the American Dream*, The Brookings Inst. (2015); see also Ron Haskins, *The Obama Evidence-Based Revolution: Will It Last?* at University of Chicago Lecture Series, THE BROOKINGS INST. (Feb. 22, 2016).

<sup>41</sup> THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE, *supra* note 20, at 37 (“[A] recent Brookings analysis found that out of the 3.9 percentage point decline in labor’s share of income over the past 25 years, import competition may account for 3.3 percentage points.”).

proportionate amount of taxes levied on living and working persons has increased over the last several decades.<sup>42</sup> This reflects an intentional de-emphasis of taxation on capital, estates and corporations. So, the after-tax proceeds of work have declined on a real basis, whereas the share of the tax base derived from work taxation has increased on a relative basis. Accordingly, if there is an impact to health from wage taxation, such an effect would be relatively more important now as the after-tax income of working persons has declined.

Several other factors may exacerbate the causal effect of wage taxes on public health. First, the “other” taxes paid by working persons (for example, sales, excise, gasoline and property) are often fixed in amount and become a relatively greater portion of disposable income where real wages decline. Second, in the case of an economic downturn on Main Street, homeownership rates decline, and small businesses go bust, the respective tax remittances of some taxpayers may then often go up. That is worth repeating—as previously self-employed persons switch the method of earning, a *higher* rate of taxation may result even if the amount of taxable income holds constant. As many tax attorneys might agree, the worst thing from a tax planning perspective is to be a living, working, person that is paid on a wage basis because there is little opportunity to reduce the tax base by tax planning (in other words, the amount of taxable income upon which the tax rate will be applied); it is much better to be dead, multinational and incorporated, and thus be able to engage in tax planning to reduce the tax base which will be subjected to income tax at the statutory rates. Third, as real wages decline, working persons may choose to work more hours in lower-paying jobs to try and maintain the prior level of income.

The empirical evidence for a causal link between economics and child health is particularly significant. Yoshikawa notes family poverty is “complexly intertwined with a large number of what some researchers refer to as poverty co-factors.”<sup>43</sup> And,

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<sup>42</sup> OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, BUDGET OF THE U.S. GOVERNMENT FISCAL YEAR 2015 HISTORICAL TABLES, *supra* note 2 at p. 32-33. See generally Ma Yigui & Lin Shumin, ‘Credit Crunch’ and Small- and Medium-sized Enterprises: Aspects affecting survival, 14 J. FIN. SERV. MARKETING 290 (2010).

<sup>43</sup> Yoshikawa et al., *supra* note 14, at 273.

because the relation is complex, the econometric modeling of causation may be difficult, perhaps even impossible. Yet, as explained in detail in part IV, the fact that child health has real economic consequences remains true, irrespective of any modeling of causative variables.<sup>44</sup> Here, a clear disconnect exists as between clinical knowledge of medical professionals and metaphysical econometric ideas on public health. Yoshikawa explained as follows:

Education, achievement, and family structure in one generation can therefore be determinants of family income poverty and then children's health and development in the next generation. Other correlates of poverty can represent mechanisms through which family poverty affects children—these can include distressed neighborhoods, persistently low-performing schools, less nutritious food supplies, and much more.<sup>45</sup>

In addition, the costs of under-investment in child health appear to be astonishingly high. Yoshikawa reports on this point: “In the United States, over twenty percent of children under the age of eighteen are officially ‘poor’: This means they live in households with incomes below the federal poverty line. Another twenty percent of children are ‘near poor’. . . Poverty is a critical risk factor for many of the mental, emotional, and behavioral disorders of children and youth.”<sup>46</sup> Halfon further reports: “At present, more than thirty percent of U.S. children have chronic health problems or special health needs.”<sup>47</sup> And, Halfon linked the statistics directly to health policy as follows:

[The risk factors for children] are health development problems, which are produced by continuous and developmentally significant interactions between children and the

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<sup>44</sup> Halfon et al., *supra* note 14, at 2117.

<sup>45</sup> Yoshikawa et al., *supra* note 14, at 273.

<sup>46</sup> *Id.* at 272 (alteration in original) (citation omitted).

<sup>47</sup> Halfon et al., *supra* note 14, at 2117 (alteration in original).

environments where they grow, play, learn, and mature into adult. . . . The urgency of reform has been underscored by the new science of life-course health development, which provides a powerful explanatory framework for understanding how poor health and social adversity during childhood can affect lifelong health.<sup>48</sup>

As such, the causal relation of child development is now a matter of *science* meaning the relevant factors are known (even if they are complex). The clinical knowledge of medical professionals has solidified into scientific *knowing* and is not conjecture; this is true even if datasets do not include the respective causal variables, and even if not every child that grows up in poverty ends up with bad health. For its part, the tax system is intertwined with the social benefit system and should also take this scientific knowledge into account on a macroeconomic level. Therefore, an economic model that does not account for this clinical scientific knowledge about economic inequality and health would not be reflective of the world as we find it.

### III. ECONOMIC THEORY, TAXATION, AND PUBLIC HEALTH

Notwithstanding the relative lack of attention given to it in the modern field of public economics, the hypothesis of a causal relation as between workers and health is not new. The role of public health in economic affairs began in Britain during the Industrial Revolution; in fact, the study of public economy began with the writings of David Ricardo and Thomas Malthus. Malthus became the first true economist in world history<sup>49</sup> and

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<sup>48</sup> *Id.* (citations omitted).

<sup>49</sup> John Avery, *Malthus' Essay on the Principle of Population*, UNIV. OF COPENHAGEN, May 31, 2005, at 20, <http://www.learndev.org/dl/MalthusEssay-Avery.pdf>

(Malthus accepted an appointment as Professor of History and Political Economy at the East India Company's College at Haileybury. This appointment made him the first professor of economics in England, and probably also the first in the world.



is famous for the idea that any public assistance granted to the poor would cause an increase in human population (given people reproduce exponentially and crop yields expand more slowly). The working poor also suffered a great deal in Malthus' time. John Avery quoted a famous passage of the era as follows:

When wages have thus been reduced to a very small sum, working people can no longer maintain their children as all good and respectable people wish to maintain their children, but are compelled to neglect them – to send them to different employments – to mills and manufactories, at a very early age. The miseries of these poor children cannot be described.<sup>50</sup>

As a historical matter, Malthus' writings were used to limit public assistance to the poor in Britain.<sup>51</sup> Avery also notes that the origin of the reference to economics as the “dismal science” was derived from Ricardo's theory of the “Iron Law of Wages” taken in combination with Malthus' writings.<sup>52</sup>

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Among the important books which he wrote while he held this post was *Principles of Political Economy, Considered with a View to their Practical Application*).

<sup>50</sup> *Id.* at 22 (citing FRANCIS PLACE, TO THE MARRIED OF BOTH SEXES OF THE WORKING PEOPLE (1822)).

<sup>51</sup> For another description of the historical time period in the context of public health *see*, Balog, *supra* note 14, at 67S, 68S

(The majority of the wealth was concentrated in the hands of the industrialists and financiers while the working class was extremely poor and lived and worked in the slum districts that were conducive to the spread of infectious diseases. These conditions included the existence of overcrowding and population density, poorly built housing deficient in ventilation and toilets, unpaved narrow streets, the presence of decaying refuse and sewage, and contaminated water supplies.)

(citations omitted).

<sup>52</sup> Avery, *supra* note 49 at 21

(Ricardo accepted Malthus' principle of population and from it he deduced what came to be called his 'Iron Law of Wages.'

Particularly, with regard to the role of taxation in economic theory, Avery suggests that Malthus either was unable to formulate a publishable theory of taxation within the larger theory, or, the tax chapter in his later works was simply lost by the editor and then never published.<sup>53</sup> Avery points out that Ricardo implored Malthus to expand the section on taxation: “In November 1819, Ricardo wrote to Malthus . . . ‘I am glad to hear that your book will be so soon in the press, but I regret that the most important part of the conclusions from the principles which you endeavor to elucidate, will not be included in it, I mean taxation.’”<sup>54</sup>

In the modern day the financial distress among working persons in the United States is high, and wage taxes make it far worse. Fareed Zakaria wrote as follows: “Why is Middle America killing itself? . . . The main causes of death are as striking as the fact itself: suicide, alcoholism and overdoses of prescription and illegal drugs.”<sup>55</sup> Economist Angus Deaton published a series of articles tracking the disproportionate loss of population amongst white working class persons in the United States.<sup>56</sup> Malthus described severe labor conditions as what he called a “positive” check on population growth. Avery wrote: “Among the positive checks, Malthus listed

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According to Ricardo, labor is a commodity, and wages are determined by the law of supply and demand: When wages fall below the starvation level, the workers’ children die. Labor then becomes a scarce commodity, and wages rise. . . . The combined pessimism of Malthus and Ricardo caused Carlile to call economics ‘the dismal science.’)

<sup>53</sup> Takuo Dome, *Malthus on Taxation and National Debt*, 29 HIST. OF POL. ECON. 275 (1997) (“When Thomas Robert Malthus published the first edition of his *Principles of Political Economy* (1829), he did not devote any specific chapter, or even section, to the subject of taxation and national debt.”).

<sup>54</sup> Avery, *supra* note 49, at 25.

<sup>55</sup> Fareed Zakaria, *America’s Self-Destructive Whites*, WASH. POST, Dec. 31, 2015, [www.washingtonpost.com/opinions/americas-self-destructivewhites/2015/12/31/5017f958afdc11e59ab0884d1cc4b33e\\_story.html](http://www.washingtonpost.com/opinions/americas-self-destructivewhites/2015/12/31/5017f958afdc11e59ab0884d1cc4b33e_story.html).

<sup>56</sup> See Anne Case & Angus Deaton, *Rising Morbidity and Mortality in Midlife Among White Non-Hispanic Americans in the 21<sup>st</sup> Century*, 112 PROC. OF THE NAT’L ACAD. OF SCI. 15078 (2015), [www.pnas.org/content/112/49/15078.full.pdf](http://www.pnas.org/content/112/49/15078.full.pdf).

‘unwholesome occupations, severe labour and exposure to the seasons, extreme poverty, bad nursing of children, great towns, excesses of all kinds, the whole train of common diseases and epidemics, wars, plagues, and famine.’<sup>57</sup> High rates of wage taxation therefore seem to function potentially both as a contraceptive<sup>58</sup> and as a method to directly reduce the population of able workers even to the modern day.<sup>59</sup>

One major difference from the time of the Industrial Revolution to the modern day is workers now pay most of the taxes to fund the modern state, in addition to performing the labor.<sup>60</sup> Accordingly, after-tax income to workers is a function of both the wage rate and wage tax levies. Workers do however get back in return some public goods. Accordingly, Malthus’ thesis on population did not hold for very long. However, a more objectionable aspect of Malthus’ thesis is still included in the theory of economics. That is, he argued the poor would not properly invest any disposable income into productive projects for society. Malthus wrote:

The labouring poor, to use a vulgar expression, seem always to live from hand to mouth. Their present wants employ their whole attention, and they seldom think of the future. Even when they have an opportunity of saving they seldom exercise

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<sup>57</sup> Avery, *supra* note 49, at 10-11.

<sup>58</sup> Carbone, *supra* note 13, at 565 (“In addition, intriguing research suggests that greater male inequality decreases overall female marriage rates in a manner that is independent of the class effects. That is, greater inequality in a region may make well-off and less-well-off women less likely to marry.”).

<sup>59</sup> See Paula Abrams, *Population Control and Sustainability: It’s the Same Old Song but with a Different Meaning*, 27 ENVTL. L. 1111, 1117 (1997) (“The motto ‘development is the best contraceptive’ received international endorsement at the Bucharest World Population Conference in 1974 and continues to be a foundational principle for international population policy. The question of what kind of development results in decreased in birth rates became the next point of controversy.”) (citations omitted).

<sup>60</sup> See ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS (1776); DAVID RICARDO, ON THE PRINCIPLES OF POLITICAL ECONOMY AND TAXATION (1817).

it, but all that is beyond their present necessities goes, generally speaking, to the ale-house.<sup>61</sup>

Philip Harvey argues neoclassical economic theory abandoned Malthusian ideas about population in favor of arguments about productivity.<sup>62</sup> Harvey wrote:

Neo-classical economists adopted essentially the same position with respect to the harmful effects of poor relief, but their opposition was no longer based on Malthus's reasoning. They argued that the receipt of relief tended to undermine habits of industry and thrift among the poor, thereby reducing their productivity and consequently the wages they could command. The result was an account of poverty among able-bodied persons that supported essentially the same policy conclusion as Malthus, but with a focus on productivity rather than fertility.<sup>63</sup>

To the contrary, Malthus made roughly two dozen references to worker productivity in his most famous essay;<sup>64</sup> Malthus

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<sup>61</sup> Avery, *supra* note 49, at 27.

<sup>62</sup> See Philip Harvey, *Joblessness and the Law Before the New Deal*, 6 GEO. J. POVERTY L. & POL'Y 1 (1999).

<sup>63</sup> *Id.* at 27.

<sup>64</sup> Dome, *supra* note 53, at 282

(The poor, supported by the assistance, have no will to save, and the people in the industrious class on whom the heavy poor rate is imposed will lose a part of their power to save. 'The poor laws may, therefore, be said to diminish both the power and the will to save among the common people, and to weaken one of the strongest incentives to sobriety and industry, and consequently to happiness.')

See, e.g., Avery, *supra* note 49, at 97

(To explain myself by an instance. Dr. Adam Smith defines the wealth of a nation to consist in the annual produce of its land and labour. This definition evidently includes manufactured produce, as well as the produce of the land. Now supposing a nation for a course of years was to add

appeared to be at least as interested in worker productivity as population control.<sup>65</sup> Takuo Dome wrote along these lines: “According to Malthus, a transfer of money from the industrious class to the poor by means of the poor rate, if the available provisions of the country remain constant, will raise the price of provisions and, as a result, impoverish the laboring class and increase the number of poor.”<sup>66</sup> Malthus also proposed a social security system funded by workers very similar to what is now applied in most industrialized nations, including the United States.<sup>67</sup> As such, an alternate explanation for lack of citation to Malthus in current literature of public economics is that Malthus did not consider workers to be persons capable of

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what it saved from its yearly revenue to its manufacturing capital solely, and not to its capital employed upon land, it is evident that it might grow richer according to the above definition.).

<sup>65</sup> Dome, *supra* note 53, at 281 (“Malthus did not support relief of the poor by imposing the poor rate – a kind of tax – on the industrious class.”); Avery, *supra* note 49, at 102

(The country would be evidently advancing in wealth, the exchangeable value of the annual produce of its land and labour would be annually augmented, yet the real funds for the maintenance of labour would be stationary, or even declining, and, consequently, the increasing wealth of the nation would rather tend to depress than to raise the condition of the poor. With regard to the command over the necessaries and comforts of life, they would be in the same or rather worse state than before; and a great part of them would have exchanged the healthy labours of agriculture for the unhealthy occupations of manufacturing industry.).

<sup>66</sup> Dome, *supra* note 53, at 281.

<sup>67</sup> Avery, *supra* note 49, at 46

(By the application of calculations to the probabilities of life and the interest of money, he proposes that a fund should be established which should assure to the old an assistance, produced, in part, by their own former savings, and, in part, by the savings of individuals who in making the same sacrifice die before they reap the benefit of it. The same, or a similar fund, should give assistance to women and children who lose their husbands, or fathers).

engaging in productive activity as opposed to self-destructive activity when left to their own devices.<sup>68</sup>

I, along with other authors, have given the reply to Malthusian-type economic arguments with reference to the novels of Charles Dickens.<sup>69</sup> However, Dickens' response should also be supplemented with an averment to John Locke and Libertarian theory. Locke argued working persons did undertake productive efforts with their labor and that they were entitled to the proceeds of mixing labor with land, for example.<sup>70</sup> This right to the fruits of labor is the fundamental premise of Lockean theory. Clearly, Malthus did not think so. Malthus felt that workers would waste away the money in the ale house. But, that is indeed very much an argument about productivity, so Harvey's conclusion that neoclassical economics and Malthus differ on productivity grounds is incorrect.

In terms of tax policy, high rates of wage taxation remove the right to the fruits of one's own labor. If one believes, however, in Dickensian fashion, workers will invest disposable after-tax income or leisure time in productive projects, then labor taxes ought to be reduced as much as possible. For example, the quintessential productive project of workers may be their children. However, if workers are incapable of making any productive investment with disposable income or leisure time, then wage taxes should obviously be set very high. The state can

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<sup>68</sup> Avery, *supra* note 49, at 11

(But though the rich by unfair combinations contribute frequently to prolong a season of distress among the poor, yet no possible form of society could prevent the almost constant action of misery upon a great part of mankind, if in a state of inequality, and upon all, if all were equal.)

<sup>69</sup> See Steven G. Calabresi, *On Liberty, Equality, and the Constitution: A Review of Richard A. Epstein's the Classical Liberal Constitution*, 8 N.Y.U. J. L. & LIBERTY 839, 909 (2014); Bret N. Bogenschneider, *The Will to Tax Avoidance: Nietzsche and Libertarian Jurisprudence*, 24 J. JURIS. 321, 327 (2014); Avery, *supra* note 49, at 19 ("One can also view many of the books of Charles Dickens as protests against Malthus' point of view.")

<sup>70</sup> See JOHN LOCKE, *The Second Treatise of Government*, in TWO TREATISES OF GOVERNMENT (Peter Laslett ed., Cambridge Univ. Press 1960) (1698); see also Arthur Cockfield, *Income Taxes and Individual Liberty: A Lockean Perspective on Radical Consumption Tax Reform*, 46 S.D. L. REV. 8 (2001).

then make the investment on workers' behalf or perhaps choose not to make any investment at all in workers; high rates of wage taxation are in part an implicit adoption of Malthusian ideas on the non-productive potentials of workers.

#### IV. TAX POLICY AND CAUSE-AND-EFFECT IN THE SOCIAL SCIENCES

The clinical knowledge of medical doctors and tax lawyers or accountants is helpful for scientific discovery in the social science of taxation. Clinical knowledge assists in the derivation of auxiliary hypothesis likely to explain causation where much about causation is unknown, and this is particularly true in respect of the social science such as taxation and public health.<sup>71</sup> For example, workers are known to suffer more health problems when also reporting financial stress. The stresses caused by heavy wage taxation may have an indirect or cumulative effect that is not directly reflected in any empirical dataset whatsoever. So, medical doctors or tax lawyers would be in a position to "issue spot" that causative factor among clients and report it to economists for further statistical study.

Economists sometimes say that in order to *know* anything about human behavior one must have a valid empirical study to *prove* (often stated as "confirm") a given hypothesis on causation. Economic papers along these lines often have a title that says: "This is what we know about xyz."<sup>72</sup> In other words, everything is unknown absent a valid empirical study.<sup>73</sup> The economist thus carries what amounts to a metaphorical lamp in front of society to lead the way forward for society. This idea of knowledge is flawed in many cases. Scientific inquiry involves the comparison of theories, *even where* such theories are

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<sup>71</sup> See Bret N. Bogenschneider, *How Helpful is Econometrics to Tax Research?* 21 N.Z. J. TAX L. & POL'Y 292 (2015).

<sup>72</sup> See, e.g., Alan Auerbach, *Who Bears the Corporate Tax: A Review of What We Know*, 20 TAX POL'Y & ECON. 1 (2006); Michael P. Devereux & Simon Loretz, *What Do We Know About Corporate Tax Competition?* (Oxford Univ. Ctr. for Bus. Tax'n, Working Paper No. 12/29, 2012).

<sup>73</sup> The averment to what we "know" is hyperbole in that economists usually first derive a given hypothesis either from metaphysics or from data itself.

inadequate in various respects. In particular, we do not return all the way to caveman knowledge simply where an economist makes the assertion a theory to which he disagrees is not statistically *certain* or a study shows that a causal relation is *confirmed*. Furthermore, the failure to *confirm* a given theory does not invalidate that theory and certainly not in the absence of any competing theory.

In the study of the relation between income inequality and public health, economists generally want to debate the causation of the known correlation between income inequality and public health. This statistical debate is then taken to cast doubt on the causal health theories developed by medical doctors and other health professionals. For example, Judge and Paterson wrote: “As Whitehead and Diderichsen (2001) have recently pointed out, ‘The academic debate on the relation between income inequality, social capital, and health has become something of a minefield, with considerable skill required to tip-toe through the conflicting evidence.’”<sup>74</sup> However, this minefield arises from an understanding of causation linked solely to empirical methods.<sup>75</sup> Simply put, one cannot “p-hack” a causal variable (in other words, use data-mining to uncover a causative variable) if it is not in the respective dataset. With the metaphorical minefield so-posed, Judge and Paterson then begin to throw the normative grenade against prior empirical studies on the subject: “Having said this we acknowledge that not everyone will be convinced partly because much of the debate about income inequality and health seems to be ‘driven more by ideology than

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<sup>74</sup> Judge & Paterson, *supra* note 9, at 13 (citing Margaret Whitehead & Finn Diderichsen, *Social Capital and Health: Tip-Toeing Through the Minefield of Evidence*, 358 THE LANCET 165, (2001)).

<sup>75</sup> *Id.* at 32

(From our point of view, the study does not add anything methodologically since it does not have individual level data. Having said that, the results show that income inequality is associated with variations in mortality in the U.S. but not in Canada: ‘There were no significant associations between income inequality and mortality in Canada at either the provincial or metropolitan area levels, whereas such associations were apparent in the United States.’)

(citation omitted).



science, so that there is a rush to judgement on both sides.”<sup>76</sup> However, the usage of the word “normative” is a marker for the lack of a reasoned argument similar to claiming that an argument is “clear” in a legal brief. Often, wherever the word “clear” appears in a legal brief, it indicates the issue is not at all clear; similarly where the word “normative” appears in an empirical paper on to taxation it also indicates the opposing argument is very strong and the best counter argument is name-calling.<sup>77</sup>

A further issue within the philosophy of science relates to the use of inductive reasoning to build science from the ground up.<sup>78</sup> Under this approach, empirical observations are used as the exclusive means *to know* essentially like building a house of cards starting from the bottom without planning it out in advance. This approach to scientific inquiry, which effectively eliminates the role of theory within science, has been rejected in multiple respects and in multiple eras.<sup>79</sup> In the public health

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<sup>76</sup> *Id.* at 48 (citing J.P. Smith, *Healthy Bodies and Thick Wallets: The Dual Relation Between Health and Economic Status*, 13 J. ECON. PERSP. 145, 163-64 (1999)).

<sup>77</sup> Bogenschneider, *supra* note 25, at 7

([E]conomics requires all prior ‘normative’ (that is, superstitious) knowledge to be discarded before its version of ‘science’ can proceed. . . . Furthermore, any description of jurisprudence (or tax law) as entirely ‘normative’ is erroneous. The formulation of a scientific hypothesis is always ‘normative’ because it sets out to refute an existing hypothesis. Scientific knowledge obviously does not start from scratch.)

<sup>78</sup> KARL POPPER, *THE LOGIC OF SCIENTIFIC DISCOVERY* 24 (2d ed., 2002) (“[A] subjective experience, or a feeling of conviction, can never justify a scientific statement, and that within science it can play no part except that of an object of an empirical (a psychological) inquiry.”).

<sup>79</sup> *See, e.g., id.* at 91

(We choose the theory which best holds its own in competition with other theories; the one which, by natural selection, proves itself the fittest to survive. This will be the one which not only has hitherto stood up to the severest tests, but the one which is also testable in the most rigorous way. A theory is a tool which we test by applying it, and which we judge as to its fitness by the results of its applications.);

literature, Judge and Paterson wrote along these lines as follows:

Despite the huge number of studies that have been published there is no really convincing evidence that income inequality has an independent effect on health after properly controlling for individual influences on health including income and other contextual factors at the area level that reflect the neo-material circumstances of the area.<sup>80</sup>

An initial response to Judge and Paterson is accordingly that the assessment of “not really convincing” is merely their inductive appraisal of the empirical results without positing an alternative theory. Judge and Paterson want to evaluate empirical knowledge with inductive comparisons by strength of the dataset and econometric methods applied in various studies. This is an idea of “science,” as determined by polling economists about how such economists view a matter of tax policy.<sup>81</sup> However, this method is not helpful for many reasons including, in part, that tax policy research does not appear to be conducted by economists in an objective manner.<sup>82</sup>

Another more technical response to Judge and Paterson is in their positing of individualized factors, such as race or geography as also potentially relevant to health outcomes.<sup>83</sup>

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PAUL FEYERABEND, REALISM, RATIONALISM AND SCIENTIFIC METHOD: PHILOSOPHICAL PAPERS VOLUME 1 212 (1981)

(First we find the facts (or, ‘phenomena’, in Newton’s terminology). Then we derive laws. Finally, we devise hypotheses for explaining the laws. Hypotheses and facts must be kept apart. It is not the imagination of the theoretician but the skill of the experimenter that determines what counts as a fact and how the facts are to be presented.).

<sup>80</sup> Judge & Paterson, *supra* note 9, at 40.

<sup>81</sup> See N. Gregory Mankiw, *Smart Taxes: An Open Invitation to Join the Pigou Club*, 35 E. ECON. J. 14 (2009) (citing a poll of economists holding PhD degrees as evidence that gasoline taxes should be increased).

<sup>82</sup> Bogenschneider, *supra* note 25, at 2.

<sup>83</sup> Judge & Paterson, *supra* note 9, at 36.

Individualized factors are always important to the study of anything; statistical analysis is the intentional limiting of the import of the individual to arrive at aggregate statistics. If one has statistical results based on economic inequality, then a subsequent study might use multi-variate statistics to show a joint correlation by including economic inequality, race, and geography, assuming that statistical detail is available. For example, a minority individual might be at greater risk by virtue of being minority, and also at risk by virtue of economic inequality, and geographic location, all at the same time. Regressions are run under such co-causal conditions all the time. But, the mere positing of another variable as causative in statistical terms is a nothing without saying what it is. For example, in the southern region of the United States, obesity is known to be more widespread with incumbent health problems such as diabetes.<sup>84</sup> That empirical fact about the southern region does not disprove the hypothesis that economic inequality causes negative health outcomes. Nonetheless, Judge and Paterson, wrote: “We conclude from this that income inequality per se cannot be that important and this is confirmed in our view by the emerging findings from the best of the recent empirical studies.”<sup>85</sup> However, that conclusion is not plausible based on the review performed.

A statistician actually cannot posit an unknown variable in an otherwise valid empirical study in order to disprove a theory

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(The general pattern of multilevel statistical results reported is very clear. Initially there appears to be a strong and statistically significant association between income inequality and health but this is substantially attenuated when data about individual characteristics of respondents are added and further reduced when additional area level variables are included.).

*See also* Mullahy et al., *supra* note 29, at 8 (“[I]ndividual, or family-level variables are more significant correlates of health than are community variables. . . . A number of challenges obscure our full understanding of these community effects, most notably issues regarding selection, causation and race.”).

<sup>84</sup> *See* Claire Suddath, *Why are Southerners So Fat?* TIME (July 9, 2009), <http://content.time.com/time/health/article/0,8599,1909406,00.html>.

<sup>85</sup> Judge & Paterson, *supra* note 9, at 48.

of causation. All that is saying is that the reviewing economist is out of ideas about causation. The proposal of an unknown variable (such as “individualized factors”) seems to be something akin to a desire to create a reasonable doubt in the minds of other economists based on the unknown. So, Judge and Paterson wrote: “We have already made it abundantly clear that we believe that the importance of income inequality per se as a determinant of population health has been greatly exaggerated. But we cannot rule out the possibility that it might have an impact especially in the most inegalitarian societies.”<sup>86</sup> But, at least in science, there must always be some doubt given that knowledge beyond a reasonable doubt is not scientific knowledge by definition, otherwise we have a religion. Furthermore, when economists claim to be *absolutely certain* on some issue as typically given in neoclassical terms, such as with the “small open economy” model, such claims are usually shown to be false within a few years thereafter.<sup>87</sup> This phenomenon probably results from economists resorting to “conventionalist” neoclassical ideas as a form of analytical “certainty” in a last-ditch defense of a particular theory against critics. So, where health clinicians have posited a negative relation between income inequality and health, skeptical economists intending to show the opposite by empirical methods need to provide an alternative theory of causation *plus* empirical evidence supporting that alternative theory.

In the pursuit of a competing theory, economists will sometimes provide a “model” with various ideas that then proceed by deductive syllogisms to reach policy claims about taxation. This method switches the analytical approach from primarily inductive comparison of datasets to deductive syllogisms. This approach seems to be appealing at first because of the use of deductive methods. However, an economic “model” is standard metaphysics (as that term was used by

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<sup>86</sup> See *id.*

<sup>87</sup> See Kimberly A. Clausing, *In Search of Corporate Tax Incidence*, 65 TAX L. REV. 433 (2012) (identifying the lack of empirical support for the “small open economy” mode); see also Bret Bogenschneider, *The Tax Paradox of Capital Investment*, 33 J. OF TAX’N OF INV. 59, 66-69 (2015) (identifying several logical flaws in the “small open economy” model).

Popper).<sup>88</sup> Whether or not such an economic model can be manipulated by deductive reasoning is actually irrelevant to its status as metaphysics. In the field of inequality, public health, and tax incidence, all of which are relevant here, economists have provided now seemingly hundreds of such metaphysical models. Whether any economist finds a particular model persuasive relates to an assessment of its metaphysical features. So, in comparison, where a medical doctor or tax lawyer reports income inequality seems to cause health problems, this causal relation is based in part on abductive reasoning. In that case, the clinician is telling us what variables are relevant for empirical study. Most of the time in the social sciences where we are concerned with the behavior of human beings (to which many causal relations are unknown) such abductive reasoning immediately trumps raw metaphysics.

### *A. Analysis of the Alternative Hypotheses of a Positive Effect of Income Inequality on Health*

After first extensively arguing that scholars can only “know” by empirical methodologies, Judge and Paterson next claimed to “logically [derive] for the sake of completeness,” some reasons why economic inequality might be *positively* correlated with health. They wrote:

Virtually all of the literature about the relationship between income inequality and health assumes that it is a negative one. But for completeness it is important to consider the possibility that the relationship might be a positive one. . . . The first possibility is associated with technological development and associated arguments about the

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<sup>88</sup> KARL POPPER, THE LOGIC OF SCIENTIFIC DISCOVERY 16 (2d ed., 2002)

(I do not even go so far as to assert that metaphysics has no value for empirical science. . . . And looking at the matter from the psychological angle, I am inclined to think that scientific discovery is impossible without faith in ideas which are of a purely speculative kind, and sometimes even quite hazy; a faith which is completely unwarranted from the point of view of science, and which, to that extent, is ‘metaphysical.’).

‘trickle down’ of benefits. . . . Another possibility is that there might be health benefits associated with income inequality through the mechanism of progressive tax structures. . . . [Third] psychosocial pathways that ought to be considered. For instance, if it is reasonable to suppose that the poor feel worse when they compare themselves to the rich then the opposite might be true; the rich perceive themselves to be better when compared to the poor.<sup>89</sup>

The identification of causative alternatives is exactly what scientific inquiry is all about. This is not a mere logical exercise undertaken for the sake of completeness. The countervailing complex pathways described by Yoshikawa for the negative relations between economic inequality and health comprise a countervailing theory and perhaps also an invitation for empirical evaluation, but first and foremost a competing theory of causation relevant to health.<sup>90</sup> The health policymaker must confront and weigh the alternative theories just like a scientist in order to make informed health policy. Thus, it is necessary to compare the proposals set forth by Judge and Paterson with competing explanations that have presented throughout this paper.

The first argument given by Judge and Paterson is that “trickle-down” *benefits* to the working poor may result from inequality.<sup>91</sup> Although macroeconomic theories of “trickle-down economics” have been widely discredited, this idea seems at least plausible as a matter of the microeconomics of any hospital; for example, one could imagine a hospital purchasing an MRI machine with the idea of using it primarily for wealthy elderly patients but then also using it on the indigent. However, the opposite situation actually seems more plausible in macroeconomic terms. That is, the price for prescription drugs appear to be set, in part, based on the Medicare reimbursement rate for elderly patients. But, that price is often out of reach for

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<sup>89</sup> Judge & Paterson, *supra* note 9, at 8.

<sup>90</sup> Yoshikawa et al., *supra* note 14, at 273.

<sup>91</sup> Judge & Paterson, *supra* note 9, at 18.

out-of-pocket patients. Absent Medicare reimbursement the prices of existing drugs might be lower and set by the market price based on a lesser demand at a fixed price, as in Canada for example. The oft-heard counter argument is of course that drug companies use the surplus funds from the high drug prices to conduct research and development of other drugs. That may be true, but such an approach posits an economic over-investment in research and development on prescription drugs and does not address the reverse explanation of a “trickle-down” effect of pricing of existing prescription drugs.

Second, as to Judge and Paterson’s averment to “health benefits associated with income inequality through the mechanism of progressive tax structures,”<sup>92</sup> it is difficult to determine what that means or to formulate an example of how such a health benefit might occur in a real-life situation. Also, the overall tax system in the United States is not progressive. Nonetheless, it may be that Judge and Paterson have in mind an indirect argument consistent with the thesis of this article that progressive taxation is beneficial simply because of what it is not. The committee for the NAS took the position on the levy of wage taxes that there is no perception of unfairness in the social security system among workers, so there is no distortion of labor supply by wage taxation.<sup>93</sup> But, that is not really a plausible modeling assumption. Young workers may not place economic value on social security benefit accruals. So, there is a further potential distortion to discretionary labor supply caused by high rates of labor taxation based on the elasticity of taxable income just as with any other tax.

Third, Judge and Paterson proposed that the psychological gains of the rich from income inequality may offset the negative health effect to workers.<sup>94</sup> The argument is that rich people just

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<sup>92</sup> *Id.*

<sup>93</sup> THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE, *supra* note 20, at 68 (“Thus, [in the U.S. social security system] there is no perception of unfairness, and no distortion of decisions about labor supply.”).

<sup>94</sup> *Id.*

There is also an argument about psychosocial pathways that ought to be considered. For instance, if it is reasonable to suppose that the poor feel worse when they compare themselves to the rich then the opposite might be true; the

like having money more than poor people like money; therefore, a windfall utility gain accrues by allocating money to the rich. In order to even imagine that scenario we need to compare taxpayers as if the monetary trade off is a one-person to one-person utility comparison; but, income inequality is more extreme in the modern era where the tradeoff is one to one hundred or more, as each wealthy person accumulates many multiples of the salary of an average working person. For example, Harvey noted that in the time of Henry VIII, the number of sheep any person could own was limited to 2,000.<sup>95</sup> So, in the modern era where the wealthy accumulate huge “Czar-like” fortunes, any interpersonal utility comparisons are exponentially against the rich just by sheer weight of numbers. Also, it is not at all clear that the utility gains to the rich from the feeling of being rich are comparable to cognizable health effects to the poor, often with more serious implications for wellness.

## V. CONCLUSION

The effective tax rate of low-income workers taking into account healthcare and education expenditures (as the Organization for Economic Co-ordination and Development recommends) and all other forms of taxation falls in the range of thirty-four to fifty-five percent.<sup>96</sup> A significant number of persons are accordingly pushed into absolute poverty by various forms of wage taxation levied on the essentials of life. As to children, the effects to health from economic conditions are more significant with roughly twenty-percent living in absolute poverty with an equivalent number close to poverty.<sup>97</sup> The causal mechanisms of how economic inequality causes harm to

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rich perceive themselves to be better when compared to the poor.

*Id.*

<sup>95</sup> Harvey, *supra* note 62, at 8.

<sup>96</sup> This figure excludes capital gains some of which accrue to elderly low-income persons who have substantial assets. See Bogenschneider, *supra* note 4, at 118.

<sup>97</sup> *Child Poverty*, NATIONAL CENTER FOR CHILDREN IN POVERTY, <http://www.nccp.org/topics/childpoverty.html> (last visited Oct. 30, 2016).



children is now solidified into a scientific field of knowledge. Medical doctors and other health clinicians do not reasonably debate whether absolute poverty causes health problems, even though all the causal mechanisms ranging from exposure to lead pipes, to poor nutrition, to harm to self-esteem have not been completely mapped in a manner sufficient to yield a significant p-value in a regression with respect to each variable. In many cases, data may not even exist on the respective causal variables.

Regressive taxation causes economic inequality. An interesting statistical question is whether regressive taxation in the United States might account for the majority of changes in economic inequality over a period of time with certain modeling parameters.<sup>98</sup> However, that question is beyond the scope of this paper; here, the point is that regressive taxation causes economic inequality. In the public health literature, the broad consensus amongst health clinicians is that such *relative* (not absolute) economic inequality also causes negative health outcomes.<sup>99</sup> The health literature now encompasses a wide-range of empirical studies suggesting such a negative causal relation by what are referred to as “poverty co-factors.” Judge and Paterson admit that among health clinicians, “it is generally accepted that poverty/low income is associated with poor health outcomes for individuals even if the pathways are not fully understood.”<sup>100</sup> However, Judge and Paterson reach the following conclusion as a matter of public policy: “In relation to income inequality and health we think it is probably best not to make assumptions about the direction of causation in advance of conducting empirical studies, although it is widely assumed that income inequality is bad for health.”<sup>101</sup> But, science is actually the evaluation of theories with other competing theories, even where each competing theory may be inadequate in some respects. Empirical evidence often helps in that

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<sup>98</sup> See Bogenschneider, *supra* note 8 at 24 (“In absolute terms at least 1.8% of the total national income share accrues to the wealthy as a result of regressive tax policies compounding over time.”).

<sup>99</sup> See R.G. Wilkinson, *Health Inequalities: Relative or Absolute Material Standards?* 314 BRIT. MED. J. 591, 592 (1997).

<sup>100</sup> Judge & Paterson, *supra* note 9, at 22.

<sup>101</sup> *Id.* at 21.

evaluation of theories. In the circumstance where health clinicians have formulated well-accepted hypotheses about causation that are not in reasonable dispute, then that is the respective *science*, at least for the time being. The use of econometric analysis to say that the empirical testing of such a hypothesis is not really convincing to that economist is not helpful to the evaluation of that theory, at minimum, without the positing of a competing theory of causation. However, the inductive comparison by economists of statistical results is relevant as a question of statistical methodology similar to other questions, such as whether results with a p-value coefficient of 0.06 ought to be taken as “significant” as a practical matter. Of course, this is simply the general study of the expectations of statisticians or economists.<sup>102</sup>

Much of the economic research on health policy focuses on controlling health costs funded by tax revenue.<sup>103</sup> Baicker and Skinner argued by direct application of Feldstein’s method that the deadweight costs of healthcare expenditures are extreme. They wrote, “The deadweight loss of the tax system is greater when the financing is more progressive. If the share of taxes paid by high-income taxpayers remains the same, the efficacy cost of raising revenue needed to finance the additional health spending is \$1.48 per dollar of revenue.”<sup>104</sup>

However, other recent studies call into question the elasticity figure derived by Feldstein because his study measured relative changes in macroeconomic inequality as changes in the elasticity of taxable income.<sup>105</sup> In fact, this was recently shown

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<sup>102</sup> See FRANK RAMSEY, *Truth and Probability*, in 58 FOUNDATIONS: ESSAYS IN PHILOSOPHY, LOGIC, MATHEMATICS AND ECONOMICS, LIBR. OF CONGRESS CATALOGING OF PUB. DATA (D.H. Mellor, ed., 1978).

<sup>103</sup> See, e.g., Katherine Baicker & Jonathan S. Skinner, *Health Care Spending Growth and the Future of U.S. Tax Rates* (NBER, Working Paper No. 16772, 2011).

<sup>104</sup> See *id.*

<sup>105</sup> Bogenschneider & Heilmeier, *supra* note 6, at 36

(The difficulty is that the Feldstein (1995) methodology for measuring the elasticity of taxable income also relied upon the change in relative income between taxpayers. But, such distortion of relative income growth of higher-income taxpayers was not measured as part of the prior study.

to be error that skewed the reported elasticity results.<sup>106</sup> So, the deadweight loss of progressive taxation is presumably much less than Feldstein first estimated. Also, as a matter of federal budgetary accounting, the redistribution of tax collections to fund healthcare expenditures is primarily a transfer from one group of workers to other categories of workers and not from income tax receipts.

In conclusion, the public policy implications of the interaction of health policy on the tax system are potentially very important. The structure of the overall tax system is highly relevant to public health outcomes on a macroeconomic level. It is entirely plausible that the costs of addressing short and long term health problems to workers and their families caused by regressive taxation actually exceed the taxes levied on those same persons. The prior publications of the WHO, or its affiliates that suggest health policy should focus solely on the aggregate dollars of tax revenue collected for redistribution to public health initiatives are accordingly in error. Very much contrary to Malthus' primary thesis that workers are unable to engage in productive efforts with the proceeds of work, the financial well-being of workers translates into a functional society. In particular, the familial investment in children seems to play a significant role in economic development by their contributions to the formation of human capital. To the extent wage taxes reduce disposable income or working hours cause a

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Feldstein (1995) identified this potential problem in the original study, and stated the following: John Navratil has repeated this analysis for the years 1983 and 1985, when there were no changes in tax rates or tax rules, to see whether there is any systemic tendency for higher marginal tax rate individuals to experience relatively greater income increases. He found no evidence of faster income growth among higher marginal tax rate groups, confirming that the patterns reported in tables 1 and 2 are due to the 1986 tax reforms. John Navratil appears to have been a doctoral researcher in the economics department at Harvard. And, in fact that empirical analysis of Navratil (as referenced by Feldstein) was essentially correct for the period 1983 to 1985, but was not correct for the subsequent period of the elasticity study.).

<sup>106</sup> *Id.* at 37, 40.

de-investment in children by working parents this imports a real economic cost for society.

As Carbone explained in detail, the economic effects are magnified on the middle class because the middle class disproportionately invests in education.<sup>107</sup> However, the good news as a matter of public policy insofar as the tax and benefit system is flawed, the system might be improved by reform initiatives. Halfon points out that the bulk of near-term health expenditures are currently spent on the elderly; “Health policy’s continued preoccupation with cost reduction has also marginalized child health system reform. The great bulk of near-term health expenditures in the United States is generated by older adults.”<sup>108</sup> The social security system functions to transfer funds from working persons primarily to retired persons. However, where real wages fall to a subsistence level, that approach may not function well for society because living people need to invest in themselves during their working years as opposed to saving for retirement, including by the maintenance of health capital. Therefore, wage taxation might be understood as, in significant part, a tax on such health capital. An optimal theory of taxation would then require a comparison of tax levies on capital in its various forms including health capital of workers and financial capital, each with potential trade-offs for society.

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<sup>107</sup> Carbone, *supra* note 13, at 546-47

(Family stability, in turn, depends on the ability to manage the competing demands of work and family. . . . [B]ecause the middle class critically depends on education and investment in children, middle class status reflects the role of gender and the family in channeling resources to the next generation to a greater degree than the status of the other groups.).

<sup>108</sup> Halfon et al., *supra* note 14, at 2122.