

The Total Economic Impact of Philadelphia's Beverage Tax

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Highlights

- Even without valuing health benefits to citizens of Philadelphia, the Philadelphia Beverage Tax (PBT) is likely to have a net positive effect on city residents.
- The total estimated economic impact of the PBT on Philadelphia's overall economy is roughly neutral with gains almost entirely offsetting costs without even accounting for estimated increases in employment for parents of children enrolled in PHLpreK.
- When estimated increases in employment for parents of children enrolled in PHLpreK are added, PHLpreK clearly provides a net benefit to Philadelphia's economy and fiscal balance despite the tax.
- This study is the first to examine the PBT's *full* impact on Philadelphia's overall economy (a macroeconomic perspective). Previous studies provided only partial (microeconomic) accountings of the PBT's impacts. For example, they focused only on the effects on beverage purchases or on changes in specific industries.
- A macroeconomic model (specifically a computable general equilibrium model) for Philadelphia was specially constructed to estimate the direct and economic effects of the tax and PHLpreK for this study.

Introduction

Recognizing the need to prepare its children for long-term academic and professional success, Philadelphia has chosen to invest in access to high-quality pre-K education. High-quality pre-K programs contribute to fewer children entering special education classes, higher high school graduation rates, increased earning potential, better health, and narrowing of the achievement gap rooted in income and other environmental factors (Barnett, 2011; Yoshikawa et al., 2013).

High-quality pre-K programs also have been shown to support parents' efforts to enter into and thrive in the workforce. The benefits ripple through the workforce, economy, and community. Yet in 2016 only one in three of Philadelphia's 42,500 three- and four-year-olds could access affordable, high-quality pre-K (Philadelphia Commission on Universal Pre-Kindergarten, 2016).

In May 2015, Philadelphians voted overwhelmingly (80 percent) to create the Philadelphia Commission on Universal Pre-Kindergarten. The commission was tasked with proposing a universal pre-K program that provides quality, affordable, and accessible services for the city's three- and four-year-old children and with recommending sustainable funding that does not reduce existing K–12 funding. This gave rise to the PHLpreK program that now funds 3,330 pre-K seats across the city.

This brief summarizes the findings from Lahr, et. al (2020) on the total economic impact on the City of Philadelphia of the Philadelphia Beverage Tax (PBT) from a macroeconomic perspective. Previous studies have

focused only on demand effects or changes in specific industries (a microeconomic perspective). Such studies have, for example, examined how consumers would react to, and how and which industries will directly suffer from, a rise in beverage prices, or how the child daycare industry is likely to thrive as a result of being subsidized.

To analyze the full economic and fiscal impact of the PBT and the PHLpreK program it supports, researchers simulated the effect of 2019 (the year prior to the pandemic) beverage tax revenues on the 2016 (the year prior to the PBT's implementation) economy of Philadelphia. They found the overall economic benefits to Philadelphia from PHLpreK is nearly identical to the costs incurred by the industries directly impacted by the PBT and workers in those industries.

About \$80.5 million of \$247.8 million collected from the PBT through the first three quarters of 2020 funded access for 3,300¹ of PHLpreK seats in more than 130 preschools across the city.

Importantly, researchers went on to examine two scenarios that estimated changes in Philadelphia's labor supply due to projected entry into the labor force of parents of children enrolled in PHLpreK. Results from both of these scenarios produced positive net benefits for Philadelphia.

PHLpreK

PHLpreK started operating in the winter of 2017, shortly after the program was proposed by the Philadelphia Commission on Universal Pre-Kindergarten. With PHLpreK, Philadelphia joined New York, Seattle, Boston, and San Antonio in providing city-funded preschool.² All these cities have invested in their young children understanding that educational gaps by race and gender are set by the time children first set foot in a kindergarten classroom and may never really close. PHLpreK now serves 3,300 children in a combination of center-based and home-based programs.

Shortly after Philadelphians voted to support PHLpreK, PBT opponents challenged the tax in court.³ The court challenge impacted the initial growth of PHLpreK, and many of the supports proposed by the Commission were not implemented until Philadelphia prevailed in a Pennsylvania Supreme Court decision in 2019. The program has since expanded at a much larger pace, then slowed this last year due to the pandemic. Consequently, since its inception in early 2017, the program went from 2,000 seats in 2017 and the 2017-18 school year, to 2,500 seats in the 2018-19 school year and to 3,300 seats in the 2019-20 and 2020-21 school year.

The PHLpreK program is free to children living within the City with attendance limited to a 5.5 hour school day during the traditional school year. Additional hours and summer school require tuition payments, although a childcare subsidy (CCS) is available to qualifying parents (based on family income, family size, child age, and residence). CCS guidelines suggest parents should work 20 plus hours a week, or work 10 hours a week and train another 10 hours.⁴

Philadelphia Beverage Tax

The PBT went into effect January 1, 2017, on dealers who supply any sugar-sweetened beverage within the city. The PBT is restricted to the supply, acquisition, delivery, or transport of such beverages when they are held out for retail sale within the city.⁵ Philadelphia officials expected the tax to add about \$1 to the cost of a two-liter bottle of soda and other sweetened beverages.

¹ This represents the capacity of the program at the time of data collection for this study. PHLpreK has since continued to expand and its current capacity is 4,000 children.

² <https://www.cityhealth.org/prek-2019>

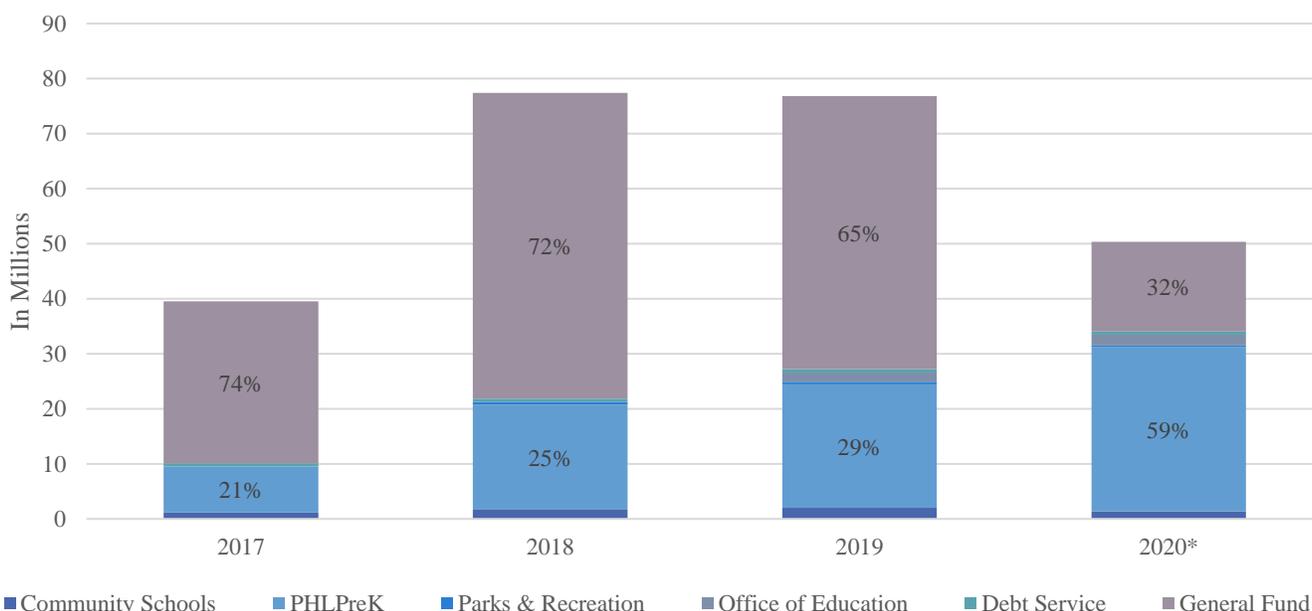
³ <https://www.inquirer.com/philly/news/soda-tax-philadelphia-supreme-court-pennsylvania-20180718.html>

⁴ Exceptions are made for families with parents who have a promise of a job that starts within 30 days of their application for a CCS. Foster parents get some added priority. Teen parents must attend an education program.

⁵ City of Philadelphia, Bill No. 160176 available online in October 2020 at <https://www.phila.gov/services/payments-assistance-taxes/business-taxes/philadelphia-beverage-tax/>.

The revenue collected from the PBT stream reached to about \$77 million annually before the pandemic. Its allocation to City expenses had not settled into a stable pattern,⁶ however, due to the newness of the PHLpreK program. The tax is 1.5 cents per ounce of beverage. Since its inception and through the first three quarters of 2020, Philadelphia has collected \$247.8 million in constant or real 2020 terms (\$244.2 million in nominal terms) in PBT revenue. This comprises a rather small share of Philadelphia’s overall economy. Figure 1 shows how these funds have been distributed over time. A great portion of the revenue to date—62.0% or \$153.6 million of the \$247.8 million—has been retained by the City’s General Fund. Another 5.5% has been used to fund community schools, the payroll of the City’s Department of Education, and the City’s Rebuild Program including debt-related bond obligations associated with this program.⁷ The remaining share (32.6%) has funded the PHLpreK program.

Figure 1. Uses of Philadelphia’s Beverage Tax, 2017-2020.



Source: Figures based on data from the Philadelphia City Controller’s Office <https://controller.phila.gov/philadelphia-audits/data-release-beverage-tax/> and R/ECON calculations. *Includes only the first three quarters. Amounts reported in full in the full report.

Previous Research

The economic rationale behind a tax on sugary beverages is to explicitly include the health costs of the beverages in its price (McGranahan & Schanzenbach, 2011), i.e., an externality-correcting Pigouvian tax (Pigou, 1920). A Pigouvian tax raises the price of a good that yields negative externalities. The higher price reduces consumption of that good, which improves social welfare. Externality costs associated with sugar-sweetened beverages are related to health care costs of obesity.

The PBT does not affect retail prices directly since it is placed on dealers and distributors rather than retailers. So, who actually pays the tax depends on the degree to which the tax is passed from distributors through to consumers. Broadly speaking, the extent of pass through is uneven for U.S. cities that have applied such a tax (Berkeley, California; Boulder, Colorado; and Philadelphia), ranging from 47% to 97% (Cawley et al., 2019b).

⁶ This appears to have been due to some conservatism on the part of City leaders as the tax was challenged in the courts. <https://www.publichealthlawcenter.org/litigation-tracker/lora-jean-williams-et-al-v-city-philadelphia-et-al-nos-2077-2078-cd-2016-2017>.

⁷ Rebuild was developed to make physical improvements to parks, recreation centers, and libraries. It has an eye toward promoting diversity and economic inclusion. In this vein, Rebuild supports minorities and women who work (or want to work) in the design and construction industries. Further it engages with community members to leverage their knowledge, power, and expertise.

Variation is likely due to consumers' responses to the tax, which varies due to reasons including preferences, income levels, and available options, among others. Two studies (Seiler, Tuchman, & Yao, 2020; Cawley et al., 2019a) identify a nearly complete pass through of the tax from distributors to consumers, corresponding to a 30% to 34% price increase. In response to that price rise, they report demand for sugary beverages in Philadelphia decreased by 31 to 46% with no noticeable changeover to bottled water and a modest substitution toward (untaxed) natural juices.

PBT opponents typically cite its regressivity as problematic. Regressive taxes comprise a larger income share of low-income households than for high-income taxpayers,⁸ which can increase their total income spent on sugary beverages. Thus, they either pay disproportionately more taxes or more heavily alter their choices. The same proponents suggest that soda taxes negatively affect low- to moderate-income households since they are more likely to have their jobs cut by soda producers, distributors, transporters, and retailers. The American Beverage Association (ABA), for example, suggested that Philadelphia's soda tax would cause that approximately 1,200 jobs to be lost within the city and most within that set of industries (Kane, 2017).⁹

While the literature on the potential negative effects of a sugar tax is rather thick, literature on the effects of child daycare on labor supply of low-income households is somewhat sparser. Heckman (1974) was among the first to address the issue of childcare and female labor-force participation. The author addressed it almost strictly in a microeconomic-theoretic manner, albeit one that holds up today. Kimmel (2006) and Severini et al. (2019) press the issue further noting that if policy makers want to stimulate more-productive employment, they should concentrate on the female labor participation, especially where it is most discouraged. They suggest that promoting female labor participation is important because it: (i) ensures the implementation of the equity principle between men and women; (ii) improves the household's well-being; (iii) reduces economic vulnerability of older women; (iv) and contributes to the growth of the economy in which they engage. These are many of the principles that the city of Philadelphia hoped to apply by promoting PHLpreK and wrap around care particularly targeted to economically disadvantaged families (as well as direct impacts on children's development). While Severini et al. (2019) simulated various scenarios of female employment, they did not examine the influence of the daycare aspect of the program, which goes hand-in-hand with its educational goals.

Parents, particularly mothers, do not make choices about paid and unpaid work in a vacuum; their choices are heavily influenced by the institutional and cultural contexts and the households in which they find themselves. Bassanini, Rasmussen, and Scarpetta (1999) note that the lack of affordable childcare is a barrier to employment and, hence, improved economic status for low-income households. That is, to the extent that childcare subsidies make paid work worthwhile for low-income households (reduce a parent's reservation wage), they serve as labor supply subsidies. In a broad review of leave policies, child daycare services and cultural norms across 19 countries, Rønsen and Sundström (2002) find that higher levels of publicly supported childcare, particularly for children below three years of age, is associated with higher levels of maternal employment and longer working hours. Connelly and Kimmel (2003) show that welfare dependency in the United States was reduced by 28 percentage points among those mothers in very low income households who had childcare expenses subsidized by 50%. Lewis (2009) notes that this relationship between publicly provided childcare with full-time employment is likely even stronger.

As in the case of sugary beverage markets, some macroeconomic analyses have been undertaken analyzing the economic impacts of childcare. Most (e.g., Pratt & Kay, 2006; Bishop-Joseph, Schaefer, & Watson, 2014) focus on the relative importance of the child daycare sector in an economy; but they do so without considering the effects of parents becoming engaged in the economy, which is a central piece of a government's rationale for providing such a public good. To our knowledge, only Graafland (2000) and Rickman and Snead (2007) have

⁸ "Theme 3: Fairness in Taxes, Lesson 2: Regressive Taxes," *Understanding Taxes Teach*, Internal Revenue Service, accessed October 2020 at <https://bit.ly/2Oxtuqv>.

⁹ This report examined only costs of Philadelphia's Beverage Tax—the reduced bottling activity along with lost trade and transport margins from consumer purchases—and neglected to measure any of its possible benefits.

taken a broader look by using an applied computable general equilibrium (CGE) model with some parallels to our analyses.

In sum, most assessments of the economic effects of beverage taxes and childcare subsidies have been microeconomic. They tend to confirm the expected changes to labor demand and supply. Such studies capture the direct partial equilibrium effects, but they omit the indirect general equilibrium macroeconomic effects that are required to assess potential equity-growth tradeoff. A general equilibrium approach captures the direct and indirect effects on all product and factor markets of any increases in participation of low-income households in the labor market. Of the research reviewed above, only Rickman and Snead (2009) take an approach similar to that required for an analysis for the PBT.

Methods

This brief summarizes analyses to understand the general equilibrium effects of a tax rise on the industry that distributes sugary beverages. This includes learning how the price rise might affect Philadelphians' consumption of such beverages and understanding how PBT revenue is spent to the benefit of the city and its citizens. These analyses also include assessing the benefits of PHLpreK freeing parents to find and hold a job. It is important to remember that the PHLpreK program is targeted to low-income households.

From the perspective of Philadelphia's economy, the size of the beverage distribution industry and the number of seats available through PHLpreK are fairly well known. The magnitude and ultimate receivers of price effects from the tax rise also appear to be fairly well-established. Not as well-known are the effects of PHLpreK on parents' entry into the labor market, and the net economic and fiscal benefits of the PBT and the use of its revenues by the City.

To evaluate the PBT and use of its revenues we apply a tailor-made computable general equilibrium (CGE) model for Philadelphia. It retains sectoral detail for beverage distributors, beverage retailers, childcare, and four household groups. The household groups are based on income levels, with extra detail for Philadelphia households under 200% of the federal poverty level. It also includes three tax categories for City revenues: the PBT, the City's wage taxes, and the city's property taxes. These features enable an evaluation of critical components of the PBT and the programs it funds. CGE models are designed to simulate the transition of an economy from an initial equilibrium level of economic activity, to a new one, and assess the new equilibrium values.

Why Computable General Equilibrium (CGE) models? Commonly used microeconomic studies capture partial-equilibrium labor-supply effects of childcare subsidies as well as direct effects on consumer demand for sugary beverages. However, these ignore all indirect macroeconomic general-equilibrium consequences. These are required to properly assess any potential equity-growth tradeoff. Therefore, we use readily available U.S. data to construct and implement a CGE model to estimate the direct and indirect economic effects of the Philadelphia Beverage Tax, its allocation and redistribution by the City (including subsidizing PHL-pre-K), and the supply of labor released via the provision of subsidized childcare. Details on the CGE model applied and its components are detailed in the full report (including the social accounting matrix, equations, elasticities, industry detail and household detail).

Findings

The analysis examines the portion of 2019 PBT revenues (\$76.9 million) distributed to child daycare (32.5% of revenues). The remainder goes to the City's general fund. Three scenarios are included in the analyses based on Philadelphia's 2016 economy—the year prior to the implementation of the PBT—as the baseline.

In Scenario 1, we analyze the effect of the tax and the spending on PHLpreK. Our analysis shows that PHLpreK's overall benefit to Philadelphia's economy is nearly identical to the costs incurred by those

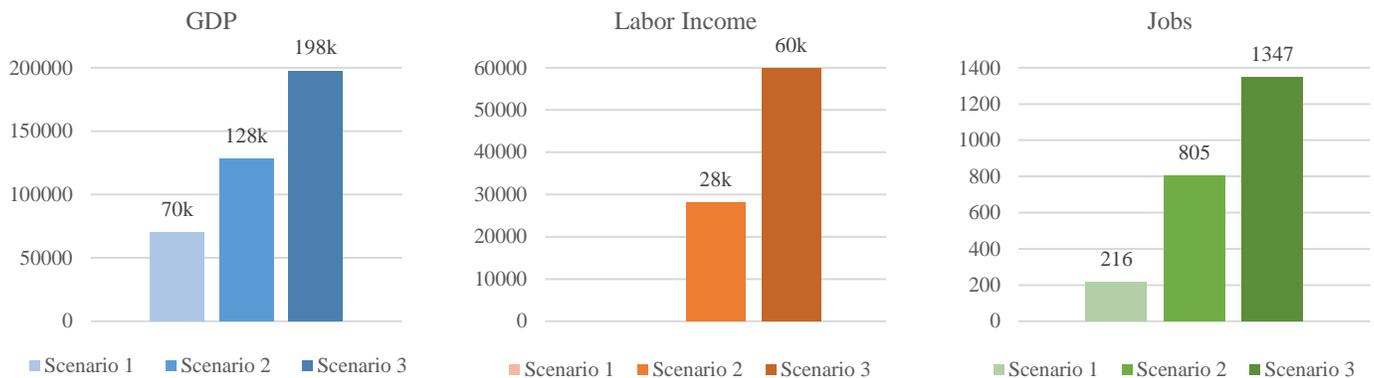
industries and their workers from the PBT. The burden on grocery and related product wholesalers is not dissimilar to that foretold by the ABA. The industry foregoes more than 200 jobs due to the PBT. Impacts are also felt by the manufacturing, professional business services, transportation and trucking services, utilities, and finance industries. By spending PBT revenue, however, the City appears to offset any losses in labor income, and marginally increases the job count, particularly in lower-paid jobs. Fiscally, the City appears to be marginally less well off. On the other hand, the benefits appear to accrue to lower-income households, which may offset those marginal costs.

Scenarios 2 and 3 invoke conditions of Scenario 1 and add additional changes to labor supply due to the addition of parents of children in subsidized childcare. Two scenarios are included since it is not clear how many parents joined the labor market, nor the number of hours they worked if they joined. Scenario 2 examines the impact on Philadelphia’s economy if its workforce expands by 0.2% (about 1,750 jobs), and Scenario 3 examines the impact if the workforce expands by 0.5% (about 4,400 jobs).

Scenario 2 displays a clear favorable economic and fiscal balance, with a net of more than 800 jobs, \$28 million in labor income, and \$50 million in private GDP. Scenario 3, while more unlikely, almost doubles the benefits of Scenario 1. In both scenarios, the City benefits fiscally.

It is clear that any small improvement in the City’s labor supply due to subsidized daycare, would secure a positive net effect for the City’s private industries and the City’s tax coffers, even with beverage distributors and related logistics being negatively affected. The greater the rise in the labor supply, the more positive is the net balance. The computed effects in private GDP, labor income and jobs for all three scenarios are illustrated in the figure 2.

Figure 2. Economic and fiscal estimated net effects on GDP, labor income and jobs for Philadelphia.



Note: Full analyses by economic sector are reported in Lahr et al., 2020.

The analyses above show that the PBT likely nets out to be positive for the economy at large, even with small labor supply effects. But it is also fair to ask whether the same can be said for the City’s tax coffers. We examine how the City’s wage, property, and other tax revenues are altered across the three scenarios. Scenario 1, which introduces the PBT and allocates its expenditure by the City’s “long-run” pattern (from 2017 to the third quarter of 2020), proves to yield a net loss to the City’s coffers local tax by just more than \$0.7 million. With a 0.2% rise in the labor supply (Scenario 2) the net balance to Philadelphia’s tax coffers is estimated to be a positive \$2.75 million. A 0.5% rise in the labor supply (Scenario 3) only further fortifies the City’s ledgers. In this last scenario, the net balance to Philadelphia’s tax coffers is estimated to be positive in the amount of \$7.81 million.

Summary

Much of the existing literature on the PBT to date paints a rather bitter picture in which the beverage industry suffer an economic storm and the City's poor suffers the brunt of its surge. But these narrow analyses examine just a portion of the local economy. While they likely accurately depict what they examine, they do not account for all of what transpires in an economy after a new tax is introduced and allocated to a jurisdiction's expenditure stream. None examined the new tax in light of a likely change in the labor supply, a major reason for providing a childcare subsidy. Indeed, analyses of similar (albeit larger) programs in Oklahoma and The Netherlands suggests that such programs are tax neutral, at least economy-wide.

We estimate computable general equilibrium (CGE) models based on Philadelphia's economy the year prior to the PBT's introduction. We then assessed the effects of its introduction. We next sequentially add a labor supply rise by 0.2% (1,750 jobs) and a 0.5% rise in Philadelphia's labor supply (4,386 jobs) on top of the PBT and its revenue reallocation.

We find the PBT net changes to the aggregate labor income and total jobs in the City are negligible; and the wage and property tax streams are not affected much. Moreover, sectors that grow appear to be those with lower wages, which benefits lower income groups. That is, City reallocations appear to have achieved their objective. Any additional stimulus of a small change in the City's labor supply enabled by the provision of the PHLpreK program is sufficient to secure a positive net effect on the City's private industries and the City's tax coffers despite the effect on beverage distributors and related logistics industries. The greater the rise in the labor supply, the more positive the net balance. In summary, the PBT has a solid fiscal and economic footing, even before accounting for any changes in the health of Philadelphia's citizens.

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About NIEER

The National Institute for Early Education Research (NIEER) at the Graduate School of Education, Rutgers University, New Brunswick, NJ, conducts and disseminates independent research and analysis to inform early childhood education policy.

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References

- Barnett, W. S. (2011). Effectiveness of early educational intervention. *Science*, 333(6045), 975-978.
- Bassanini, Andrea, Jørn H. Rasmussen, and Stephano Scarpetta. (1999). "The Economic Effects of Employment-conditional Income Support Schemes for the Low-paid: An Illustration from a CGE Model Applied to Four OECD Countries," *OECD Economics Department Working Papers No. 224*. Available online in October 2020 at <http://www.oecd.org/unitedstates/1880888.pdf>.
- Bishop-Josef, Sandra, Stephanie Schaefer, and Sara Watson. (2014). "Strengthening Pennsylvania Businesses through Investments in Pre-Kindergarten: How Investments in Early Learning Increase Sales from Local Businesses, Create Jobs and Grow the Economy," a report by ReadyNation/America's Edge Pennsylvania: Harrisburg, Pennsylvania. Available in October 2020 at <http://www.prekforpa.org/wp-content/uploads/2014/04/PA-Multiplier-Report-4-25-14.pdf>.
- Cawley, John, Anne M. Thow, Katherine Wen, and David Frisvold. (2019a). "The Economics of Taxes on Sugar-Sweetened Beverages: A Review of the Effects on Prices, Sales, Cross-border Shopping, and Consumption," *Annual Review of Nutrition*, 39, 317-338.
- Cawley, John, Barton Willage, and David Frisvold. (2018). "Pass-Through of a Tax on Sugar-sweetened Beverages at the Philadelphia International Airport," *Journal of the American Medical Association*, 319(3), 305-306.
- Cawley, John, David Frisvold, Anna Hill, and David Jones. (2019b). "The Impact of the Philadelphia Beverage Tax on Purchases and Consumption by Adults and Children," *Journal of Health Economics*, 67, 102225.
- Connelly, Rachel, and Jean Kimmel. (2003) "The Effect of Childcare Costs on the Employment and Welfare Reciprocity of Single Mothers," *Southern Economic Journal*, 69(3), 498-519.
- Graafland, Johan J. (2000). "Childcare Subsidies, Labour Supply and Public Finance: An AGE Approach," *Economic Modelling*, 17(2), 209-246.
- Heckman, James J. (1974). "Effects of Child-Care Programs on Women's Work Effort," *Journal of Political Economy*, 82(2, Part 2), S136-S163.
- Kane, Lauren. (2017) *The Economic Impact of Philadelphia's Beverage Tax*. A report by Oxford Economics for the American Beverage Association, December. Available in October 2020 at <https://www.ameribev.org/files/resources/oe-economic-impact-study.pdf>.
- Kimmel, Jean. (2006). "Child Care, Female Employment, and Economic Growth." *Community Development*, 37(2), 71-85.
- Lahr, M.L., Yao, Y., Fei, D. & A. Lee. (2020). *The Total Economic Impacts of Philadelphia's Beverage Tax*. New Brunswick, NJ: Rutgers Economic Advisory Service (R/ECON™) & The National Institute for Early Education Research.
- Lewis, Jane. (2009). *Work-Family Balance, Gender, and Policy*. Northampton, MA: Edward Elgar.
- McGranahan, Leslie, and Diane W. Schanzenbach. (2011) "Who Would Be Affected by Soda Taxes?," *Chicago Fed Letter*, 284, 1.
- Philadelphia Commission on Universal Pre-Kindergarten. (2016). *Final Recommendations Report*. April 15th, 2016. City of Philadelphia: Author.
- Pigou, Arthur C. (1920). *The Economics of Welfare*. London: Macmillan.
- Pratt, James E., and David L. Kay. (2006). "Beyond Looking Backward: Is Childcare a Key Economic Sector?," *Community Development*, 37(2), 23-37.
- Rickman, Dan S. and Mark C. Snead. (2007) "A Regional Comparative Static CGE Analysis of Subsidized Child Care," *Growth and Change*, 38(1), 111-139.
- Rønsen, Marit and Marianne Sundström. (2002). "Family Policy and After-birth Employment among New Mothers—A Comparison of Finland, Norway and Sweden," *European Journal of Population*, 18(2), 121-152.
- Seiler, Stephan, Anna Tuchman, and Song Yao. (2020). "The Impact of Soda Taxes: Pass-through, Tax Avoidance, and Nutritional Effects," *Journal of Marketing Research*, 0022243720969401.
- Severini, F., Felici, F., Ferracuti, N., Pretaroli, R., & Socci, C. (2019). Gender policy and female employment: a CGE model for Italy. *Economic Systems Research*, 31(1), 92-113.
- Yoshikawa, H., Weiland, C., Brooks-Gunn, J., Burchinal, M. R., Espinosa, L. M., Gormley, W. T., ... & Zaslow, M. J. (2013). *Investing in Our Future: The Evidence Base on Preschool Education*. Society for Research in Child Development.