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America's "Great Equalizer"? Modern Trends in Education Funding Disparities and New Policy Solutions

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ABSTRACT

For decades, debates around education access and funding have become increasingly potent, as an extensive body of research has made the correlation between human capital and future outcomes abundantly clear. As inequality deepens, Americans continually question whether the American Dream still exists, and economists are scrambling to identify the underlying origin. In light of these trends, this paper aims to highlight issues in education funding, which perpetuate institutionalized divisions by class and race, and illuminate how those disparities translate into broader economic issues that extend far beyond the classroom. Following an analysis of status-quo funding measures, I will turn to a series of potential policy interventions that aim to reduce disparities by desegregating opportunity access via housing voucher and wage subsidy remedies. After conducting a cost-benefit analysis of each policy using data from multiple studies, I will conclude my analysis with common next steps necessary to make policies effective going forward.

Introduction

Education, in its most fundamental dimension, is instruction that shapes both one's self-perception and perception of the world around them. Education determines the very understanding of reality that we adopt, and thus its proper, equitable, and adequate provision by the state has been deemed essential to sufficing the natural rights of all citizens. Horace Mann, recognized as the father of the American public school system, deemed education "The Great Equalizer" for its goal of granting all American children a common right to its provision, despite any external factors. While this determination is agreeable in concept, its fruition has repeatedly fallen short, and the consequences have been dire, given education's decisive role in shaping the future. The history of racial and socio-economic mistreatment in the United States has institutionalized discrepancies in the provision and access to the most fundamental rights of any citizen, leaving children today still being robbed of their very ability to function in the real world. In light of these trends, Americans increasingly question whether the American Dream of social mobility, despite socio-economic circumstances, is still a lived reality or simply a deceptive fantasy. While reforms of education policy aren't the singular solution to the myriad injustices that challenge our nation today, the significant influence education has on early development makes it a decisive factor in either introducing or dissipating detrimental inequities in opportunity access from the very beginning. Education's proximity to the origin of societal issues justifies extensive examination by those who wish to mitigate its broader consequences. As inequality of opportunity access in the U.S. continues to rise, according to Chetty et al. (2014), the necessity of effective reforms grows with it.

However, "education" embodies a complex web of political, social, cultural, and economic factors that, to begin to examine, requires targeted inquiry. Funding and resource allocation, being the primary influence the government has over education provision, has always been central to education debates. Policymakers have for decades debated who ought to be funded and to what extent to achieve desired outcomes. While disagreement is inevitable on a topic of this nature, a considerable consensus has developed around the notion that greater funding must be provided to those with greater need to ensure the right to education is protected. Policies have been built around this ideal since the mid-1900s, and some states have seen considerable success. However, in most states, the disconnect between funding ideals in policies and funding realities is disturbingly apparent. Mending this disconnect by introducing small tweaks to funding formulas over the past 30 years has had minimal success, which suggests that perhaps the problem must be reassessed. However, the consistent failure of current education policy approaches may also indicate the need for a new approach to the provision of opportunity access that goes beyond the realm of education funding altogether.

To explore these possibilities, my analysis will revolve around the following questions: What are the modern issues with education funding in the U.S., and how do they translate into outcome disparities along socio-economic lines? How can the government, on a federal and state level, apply new intervention strategies to reduce these disparities and achieve a more just state? In this paper, I will begin with a brief overview of historical trends in the U.S. education system to contextualize the considerations of modern policy debates that will follow. I will then examine modern trends in education funding and the current issues it presents, using the findings and analysis of Baker (2018). Following the discussion of education funding, I will present the findings of Guerrieri and Fogli (2019) to explain how educational disparities translate into neighborhood effects that ultimately segregate future economic outcomes by class and race. I will then investigate a series of new large-scale housing voucher and wage subsidy programs, examined in Chetty et al. (2016) and Chyn and Daruich (2022), which aim to reduce the segregation of opportunity access that dysfunctional school funding systems perpetuate. I will evaluate the feasibility of adopting each policy through a cost-benefit analysis based on the results of each study. Finally, I will present common next steps that should be considered going forward.

Methodology

The analysis of this paper will be split into two components: first, a review of existing literature on historical and modern U.S. education policies, and second, an analysis of policy proposals made in recent studies of how neighborhood effects, which are significantly influenced by education quality, impact future economic outcomes.

To begin with, the literature review component shall entail a deep dive into concerns raised by Bruce Baker and Sean Corcoran in their 2012 study of state education funding systems, which Baker highlights in his 2018 publication, “Educational Inequality and School Finance: Why Money Matters for America’s Students.” I will draw on several authors to contextualize the modern concerns Baker raises, with greatest focus on trends described in the 2018 report, “The Shifting Landscape of Education Governance,” authored by Professor of Urban Affairs Jeffrey W. Snyder. Finally, I will briefly outline an alternative federal funding solution presented in the 2022 Economic Policy Institute report, “Public Education Funding in the U.S. Needs an Overhaul,” by economists Sylvia Allegretto, Emma Garcia, and Elaine Weiss.

Next, I will turn to an analysis of policy proposals, such as housing vouchers and wage subsidies, based on the results of several recent research papers that examine the relationship between education and subsequent economic returns. First, the connection between education and other outcomes is presented in the 2019 report, “The End of the American Dream? Inequality and Segregation in U.S. Cities, by economists Alessandra Fogli and Veronica Guerrieri. This report examines how neighborhood effects, formally labeled “local spillovers,” capture educational disparities that create segregated economic outcomes. Once this relationship is deconstructed, I turn to housing voucher policy proposals derived from data analysis of the 1990s Moving to Opportunities experiment in the 2016 report, “The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment,” by Harvard Economics Professors Raj Chetty, Nathaniel Hendren, and Lawrence F. Katz. This paper takes the idea of segregated local spillovers from Guerrieri and Fogli (2019), and explores ways for the government to move low-income families to neighborhoods with better spillovers. Then, I will turn to the 2022 paper, "An Equilibrium Analysis of the Effects of Neighborhood-based Interventions on Children," authored by economists Eric Chyn and Diego Daruich. This paper analyzes an economic model of housing vouchers and wage subsidy interventions, using MTO data from Chetty et al. (2016) as a reference. I finally formulate my own cost-benefit analysis discussion rooted in the data and discussion of policy considerations within each paper.

Historical and Modern Trends in Education Funding

Education, or human capital, as economists often coin it, is the bellwether of individual, national, and global future outcomes and thus attracts vast attention from the various stakeholders involved. A large body of research has proven the strong correlation between education and future income, innovation, and social mobility. Not only is education a driver of economic performance, but it also plays an instrumental role in the construction of individual and societal well-being. Schools are central to the upbringing of future generations, and that upbringing includes the establishment of social, emotional, and moral norms, in addition to intellectual instruction. While what this "instruction of well-being" per se should entail is constantly debated, it is, and foreseeably will remain a critical part of how schools impact students. These two perceived purposes of education that often clash are together known as the *political economy of education* (Gradstein et al., 2005). Education is intrinsically tied to the political, social, and economic endeavors of any nation, and the clearer this reality has become, the more resources public agencies and initiatives have allocated to education policy. Conceptions about education have for decades branched out far past their local origins, and the treatment of education as an issue distinct from the general political arena has become obsolete. The end of this isolated conception of education policy, coined by Jeffrey Henig as *educational exceptionalism*, has become abundantly clear and necessary to creating reform that considers the roles of poverty, housing, neighborhoods, and even social and cultural capital, which all undeniably affect the way children develop and achieve outcomes in schools. This modern framework for reform will be used in each discussion of current policy options. However, before diving into policy debates, it is important to understand how we have arrived at the status quo.

A Brief History of U.S. Education

The modern recognition of the complex web of social, economic, and even geographic factors that are often simplified to "the education system" has by no means historically been the case. Despite the existence of education clauses in every state constitution since the 19th century, state and federal involvement in schools was spotty at best until the 1950s, and local actors dictated the form and function of public education. However, the need for economies of scale, as urbanization placed pressure on decentralized education systems, required an increasing state and federal role.

The Civil Rights Movement also forced the government to take the reins of accountability, as minority voices exposed the inequalities that made the education system anything but fair and adequate for all at the time. These disparities were only amplified by local-level discrimination and corruption. The culmination of civil rights efforts arrived in the landmark Supreme Court decision, *Brown v. Board of Education* (1954), ruling that schools could not be segregated by race. In the post-Brown era, judicial involvement in education was followed by increased executive involvement, with President Johnson's *War On Poverty* legislation in the 1960s, which aimed to address the high poverty rate at the time by giving economic opportunities to the struggling lower class. The Elementary and Secondary Education Act of 1965 (ESEA) was one of several acts in the *War on Poverty* legislation; ESEA provided a large amount of federal aid for the first time to public schools in all 50 states, incentivizing states to provide greater funding to high poverty districts primarily through Title 1 of ESEA. ESEA has been consistently reauthorized since it was originally passed, and the bill reflects a shift toward government involvement in funding, as well as a greater emphasis on adequacy of education.

As Cold War hegemonic concerns, epitomized by the 1983 *A Nation at Risk* report, brought education policy considerations straight to the Oval Office, adequacy became a focal point of reform. Funding was increased, but more notably, the international competition for hegemony in economic, political, and social spheres had formally found its way into U.S. classrooms, as the federal government attempted to align academic achievement goals with broader national interests. Concerns with student outcomes became the hallmark of reform in the decades that followed in the form of Standards-Based Reforms and Accountability (SBRA) laws. SBRA laws focused on establishing standard outcomes that states and local districts were expected to meet and often included punitive measures for entities that repeatedly fell short. Clinton, Bush, and Obama each established SBRA legislation, with the Goals 2000: Educate America Act, No Child Left Behind Act (NCLB), and the Common Core State Standards (CCSS), respectively.

While setting a clear bar of achievement seems to be an effective means to more consistent student outcomes, that truth relies on one key underlying condition: all schools have the resources and capability of meeting that bar in the first place. This condition is not consistently met in many states, and thus, the SBRA-era had at best mixed results, despite each successor's attempt to build on former legislation.

Modern Trends in Education Funding: Stealth Inequities

The lessons learned during the SBRA era have prompted modern debates on modes of resource allocation that make adequacy and equity of educational outcomes possible. While resource allocation in relation to education describes many forms of capital, financial capital serves as the foundation necessary to construct quality schools. The local origins of the U.S. public school system have created schools today that are still largely funded by local taxes, particularly local property tax, even with greater state and federal involvement in recent years. Figure 1 illustrates the proportion of each revenue source used to fund public secondary and elementary schools in 2017/2018, based on data from the National Center for Education Statistics.

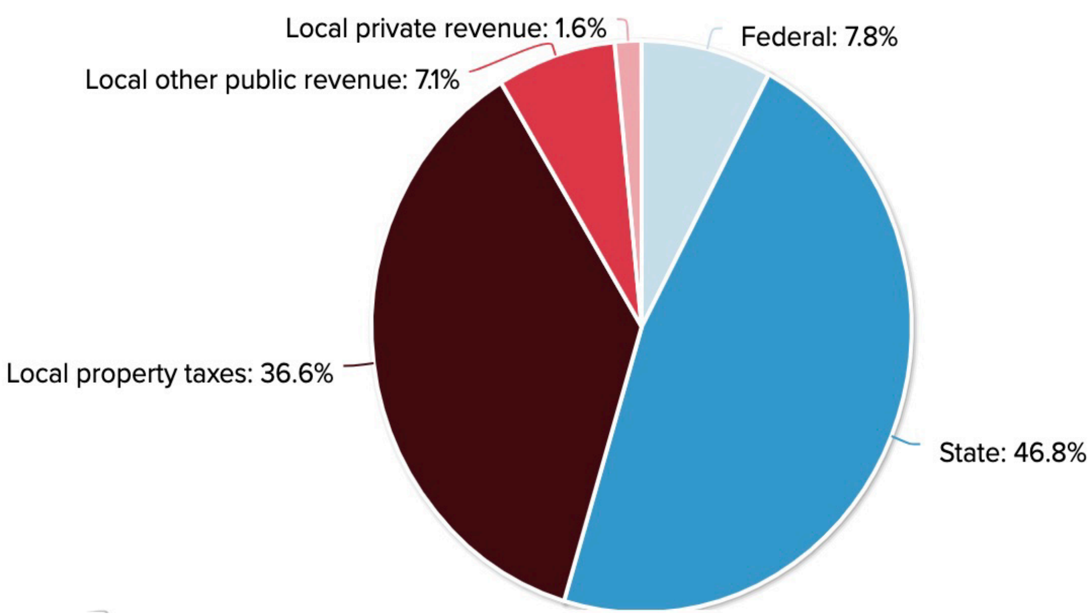

Figure 1. Revenues for Public Elementary and Secondary Schools by Source of Funds, 2017-2018. Source: National Center for Education Statistics (2020).

Nearly 37% of funding revenue originates from local property taxes. With local property tax being a primary funding source, wealthier school districts with higher property values have a much greater capacity to fund their schools. This leaves schools in poor districts with low property values in an extreme funding deficit. For this reason, local property tax has long been the culprit behind disparities along class lines in school quality and outcomes in the U.S. public school system. However, reducing these disparities isn't necessarily contingent on abolishing local property tax funding. One solution, which has been adopted to some degree on the state and federal level for decades, is using state and federal aid to equalize funding, by providing more government funding to districts with higher need and lower local funding capacity. This strategy utilizes a framework of equity developed in the early 80s by NYU professor Leanna Stiefel, which contends that achieving equity entails the equal treatment of equals, known as horizontal equity, and the unequal treatment of unequals, known as vertical equity. This now widely adopted framework encourages the unequal distribution of state and federal funds towards districts that don't have high local funding capacity or that have other needs for additional funding support (i.e., a disproportionately high number of students with disabilities or limited English proficiency). Baker (2018) terms this model of funding, *progressive funding;* he contends that progressive funding can only be achieved if state aid serves to account for differences in both need and capacity. Figure 2 displays what a theoretical progressive school finance model would look like, from lowest to highest need.

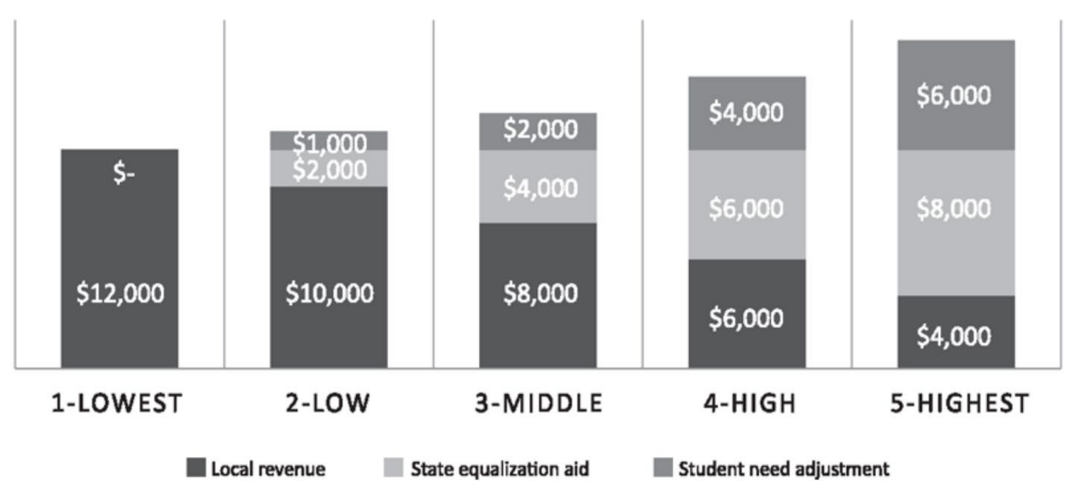

Figure 2. Hypothetical Need-based (Progressive) Funding Distribution. Source: Baker et al., School Funding Fairness Data System.

Baker notes that in order to be effective, state funding formulas must also recognize differences in labor costs or population density that may justify additional funding in certain districts. While the relative distribution of resources to need is expected to be constant to achieve equity, it is unrealistic for states to chase low-need schools in this regard. Under this model, the aim is to ensure high-need districts at least achieve certain minimum standards of adequacy.

The need for state aid to be based on a progressive model has long been acknowledged by states, but very few have practically achieved this goal. In states such as Illinois and Pennsylvania, school funding has effectively become regressive, with low-need districts retaining the most funding. In 2013, Chicago Public Schools was forced to close 50 public schools serving high-need constituents as a result. On the flipside, in states such as New Jersey, where court rulings and subsequent calls for action have overshadowed bureaucratic politics, school financing is closely aligned with the progressive model, and consequently, student outcomes are some of the best in the nation.

If political actors have recognized the need for progressive funding, then why are states still struggling to provide aid where it is needed? Bruce Baker and Sean Corcoran pursue this question in their 2012 report on inequities in state school funding formulas. After examining several state school funding formulas, they identify a series of subtle clauses in legislation, which they term "stealth inequities," that are actively "un-equalizing" education financing. Public school funding is, in most states, the most considerable portion of the state budget and serves as the primary mechanism for state representatives to serve their constituents. However, the very significance of the education budget generates contentious political debates that often result in ineffective compromises. Baker and Corcoran found that within almost every state school funding formula, there are a series of problematic sub-formulas and provisions that often result from political tradeoffs, which simply reverse any originally intended equalizing effects. These provisions don't take any singular form, but Baker and Corcoran do highlight a few provisions in their report that have particularly adverse effects.

For example, while an ideal progressive funding model in general state aid formulas would provide no aid to school districts with sufficient resources from local property tax, most states have in place minimum aid provisions that ensure every district gets state aid to some extent. While ensuring every district receives state funding seems to be an agreeable provision, Baker found that they adversely provide wealthy districts that already have local funding capacities of two to three times what they need with even more funding. This baseline aid actually wastes state aid that could be used in higher-need districts and maintains gaps between the rich and the poor. To make matters worse, Baker and Corcoran also found that several states have "hold-harmless provisions" that essentially require every district to receive no less in aid than they received the year prior. Thus, even states that have removed minimum aid provisions still provide high-capacity districts with consistent funding that they don't require.

In addition to the minimum aid provisions, many states have adopted subsidiary aid formulas that simultaneously operate with the primary general aid formula. While establishing multiple funding formulas isn't an inherently flawed approach, Baker and Corcoran found that states have inadequately constructed these additional formulas to neglect differences amongst school districts in local capacity, population, and other key determinants of need. As a result, the funds allocated from subsidiary formulas simply counteract general aid formulas that are progressive. In all likelihood, many of these subsidiary formulas and their inadequate construction are not a result of poor attention to detail but rather a byproduct of political compromises to satisfy the representatives of wealthier districts.

In three of the six states Baker and Corcoran analyzed, additional state aid intended to reduce local property taxation also had adverse effects on the progressivity of funding. Local property tax relief programs aim to reduce local property taxes required for the funding of education to ensure that the relative level of local funding effort from district to district is constant. In other words, they aim to ensure certain districts aren't paying higher tax rates than other districts to achieve the same outcomes, as that would be inequitable. While these tax relief policies have the correct goals in mind, they are completely unnecessary, as the purpose of state equalization aid in the first place is to relieve the burden of locally funding schools for districts that can't afford to do so. However, in certain states, including New York, Missouri, and Texas, local tax relief programs actually provide aid to the wealthiest districts that nominally use the most local funds for education, acting in complete opposition to the general aid formula. Providing more aid to low-need districts that do produce the greatest local funding, but only because their property values are the highest, only further "un-equalizes" education funding. In New York, Baker and Corcoran also found that the excess funding wealthy districts receive from these measures leads to greater inefficiencies in the spending of those funds by the districts.

The final stealth inequity Baker and Corcoran highlight is school funding formulas based on attendance rates. In Missouri, state aid is distributed primarily based on daily attendance records instead of school enrollment, with additional weights for factoring in need. While rewarding schools with high daily attendance rates seems effective, high-poverty, low-income districts often have the lowest daily attendance rates for reasons that school boards and officials cannot easily control. Thus, high-need districts are again neglected, while wealthier districts with minimal attendance issues are rewarded.

Baker and Corcoran's in-depth analysis of New York, Missouri, Texas, Illinois, Pennsylvania, and North Carolina captures the subtlety with which inequalities can be created. Every policy that the study found to be problematic is, to the passing eye, a perfectly agreeable and practical approach to achieving educational adequacy and equity. Minimum funding clauses or local property tax relief formulas are efforts that have respectable goals in mind and thus may receive approval from policymakers and voters alike. However, these measures erode, rather than uphold, state education ideals when put into practice. The lack of targeted language and attention to differences in capacity and need in these subsidiary policies is what continues to undermine the U.S. education system, even in states with general aid formulas aligned to progressive funding ideals. While the hopeful conclusion would be that policymakers have unintentionally overlooked flaws in otherwise effective policy measures over the years, that is unfortunately the least probable answer. As Baker and Corcoran assert throughout their paper, these stealth inequities are likely not a result of naivete; they are rather a result of state policymakers acting in the self-interest of their district to maximize political support and secure re-election. Until the goals of policymakers are uniformly rooted in the ideals of equitable and adequate education for all, the primarily state-funded education system of the U.S. will continue to see small coalitions of self-interested politicians undermine America's future.

The political gridlock behind state-run education systems has prompted scholars to explore new alternatives to the provision of educational opportunities. One such proposal advocated in a 2022 Economic Policy Institute Report is for the federal government to take the reins. Allegretto et al. (2022) concurs with Baker's sentiments on primarily state-funded education, highlighting its consistent failures, particularly since the Great Recession. To fix this, Allegretto et al. propose a radical approach: to completely revamp public education funding and make the federal government the primary contributor. Allegretto et al. cite a series of benefits, including greater alignment and the reduction of education downturns after recessions. They found that even almost a decade after the Great Recession, many states still had public school districts that had not recovered to similar levels of funding. Meanwhile, they contend that greater federal funding and less state involvement would stabilize the education sector in times of hardship and avoid these long periods of education funding droughts. While an unorthodox approach compared to those of the past, the federal funding proposal in this recent paper captures a broader trend in education policy: a need for new solutions. In the next section of this paper, I will explore in depth a set of proposed new solutions that similarly aim to ensure educational opportunity and its corresponding economic benefits are fairly and adequately distributed across the U.S.

Neighborhood-Based Interventions

The rest of this paper will shift away from education funding to explore a new way for the government to provide adequate educational and economic opportunities to families in currently underfunded districts: large-scale neighborhood-based interventions. While not a direct solution to education funding issues, these policy initiatives can diminish the segregation of outcomes that poor funding promotes. The end of *educational exceptionalism* as the framework for reform has prompted policymakers to investigate indirect solutions such as neighborhood interventions. However, to explore these solutions, we must first answer a key question: How does poor school funding result in segregation and unequal future outcomes?

From Education Funding to Economic Outcomes

The intrinsic connection between education and individual economic outcomes, such as eventual college enrollment, occupational choice, and ultimately, income and wealth, unfortunately means that inequities and inadequacies in the classroom only foreshadow similar dilemmas outside of the classroom. As welfare concerns of social mobility, income inequality, and segregation by income have grown in the past few decades, economists have been in constant pursuit of the underlying origins, one of which being education. Durlauf (1996b) and Benabou (1993) use dynamic and steady-state models, respectively, to explore the effects of human capital investment on local economic outcomes. Both studies found that occupational segregation and geographic segregation by income are, in part, driven by the dysfunctional financing of schools. Building on this work, Guerrieri and Fogli (2019) examine the underlying factors that have fostered a steady increase in income inequality and residential segregation by income in the U.S. since the 1980s. Guerrieri and Fogli first document a positive correlation between income inequality, using the Gini index, and residential segregation by income, using a dissimilarity index, across time and space. They then set up a neighborhood overlapping generation model with endogenous educational choice, calibrated against the U.S. 1980 census data. The key factor their study factors in is local spillover:

"Investment in education yields higher returns in neighborhoods with higher average level of human capital. Such a spillover can capture a variety of mechanisms: differences in the quality of public schools, peer effects, social norms, learning from neighbors' experience, networks, and so forth" - Guerrieri & Fogli, 2019, p. 3

Local spillover embodies a key aspect of opportunity access: where you live has become a significant determinant of your exposure and accumulation of capital, including human capital. This is, in part, a result of the segregation of school quality along socio-economic lines that poor resource allocation strategies have perpetuated. Guerrieri and Fogli conclude that segregation by income and inequality amplify each other because of local spillover effects that consequently affect economic outcomes. When an unexpected permanent skill premium shock is introduced, as was the case in the 1980-2010 data the study examined, segregation provokes further growth in inequality. Since the skill premium represents the demand for skilled workers, an increase in skill premium simply amplifies the importance of education access to attaining economic success, thus amplifying the impact of local spillovers and where you live.

Housing Vouchers and Wage Subsidies

This emerging literature revealing strong evidence of neighborhood effects, including the quality of schools, on long-term outcomes of children, has led to various policy explorations that aim to reduce or take advantage of endogenous differences to ultimately alleviate the persistence of outcome disparities. Individuals who live in high-poverty areas fare far worse than those in low-poverty areas in economic, health, and education outcomes. These outcomes can be traced back to the effects of local spillover outlined in Fogli and Guerrieri (2019). The differences in education quality between neighborhoods, largely due to funding inequities, mean that certain neighborhoods have greater access to economic opportunities than others. To help fairly redistribute opportunities, scholars have explored policies that move low-income families to previously inaccessible opportunities. In this section, we will investigate the efficacy of policy proposals from two studies that explore how housing vouchers and wage subsidies can be crafted to mitigate opportunity gaps along socio-economic lines.

The first study I will turn to is a 2016 analysis, led by American economist and Harvard Professor of Economics Raj Chetty, of the 1990s Moving To Opportunities (MTO) experiment. MTO was a social science experiment conducted by the U.S. Department of Housing and Urban Development. In the experiment, 4500 families residing in high-poverty neighborhoods of 5 major US cities were randomly offered one of three housing options: public housing in their current neighborhood with no voucher (control group), a Section 8 housing voucher, or a conditional housing voucher only redeemable in neighborhoods with a poverty rate below 10%. The Section 8 voucher offers standard subsidized housing with no additional conditions, essentially enabling the recipients to apply the voucher to housing in any neighborhood. Chetty and his colleagues hypothesize that families with young children who move from high to low-poverty neighborhoods will improve their long-term economic outcomes, and as the age of the child at the time of exposure increases, the less improvement they will see. This hypothesis was derived from several studies that contend there is a correlation between the duration of exposure to a given neighborhood and the long-term outcomes of that individual.

Chetty et al., using declassified tax records to track individuals over time, observed that college attendance rates and income of children under 13 when they moved were significantly higher in the conditional voucher group compared to the control group. The Section 8 treatment falls somewhere in between, as not all of those families chose to move into low-poverty neighborhoods. Families who received the conditional voucher only applicable to low-poverty neighborhoods also saw their children be less likely to become single parents and more likely to live in a low-poverty neighborhood once adults. Chetty et al. used endogenous income models to generate long-term projections of economic outcomes as well. They concluded that young children (below 13) who move from high to low-poverty neighborhoods with the conditional voucher will increase lifetime earnings by $302,000. This figure holds significance, as Chetty et al., in their own cost-benefit analysis of the policy, contend that the tax revenue gained from these individuals would in fact offset the costs of adopting an MTO-esque policy in the long run. This claim makes the possibility of housing vouchers particularly compelling, as they appear to have a net cost below or equal to zero, with the broader population of taxpayers potentially reaping benefits from additional capital created. Chetty et al. emphasize that crucial to attaining these outcomes is maintaining the targeted nature of the vouchers. The policy should be expected to reap such benefits only if the government adopted a policy that provides this residential opportunity to low-income families with children below the age of 13, preferably even younger, with the condition that they only relocate to low-poverty areas.

This analysis validates the reality of neighborhood effects, such as quality of education, outlined by Guerrieri and Fogli (2019) and makes a compelling case for the use of targeted housing vouchers. However, further considerations must be made before investing more resources into housing policies, which the federal government currently spends $46 billion a year on.

The first essential consideration to note is the scalability of this policy strategy. Only 4500 families were enrolled in the three housing options across five different cities, which is a minimal percentage of the total impoverished population in each city. Since this experiment dealt with such a small subgroup of the population, it is hard to determine what the effects would be of such a policy if scaled to move hundreds of thousands of families to similar opportunities. The most notable concern of scaling a policy that relies on the endogenously advantageous effects of local spillover in lower poverty neighborhoods is that those spillover effects would be diminished with a greater number of families moving into those neighborhoods. The social, cultural, and economic benefits, including the quality of school environments and funding, could be reduced until the former endogenously "good" neighborhood evolves into a neighborhood with minimal positive effects on development.

The second concern to address is the effects of such a policy on general equilibrium forces, such as rents and the spillovers themselves. While MTO closely tracked the development of the targeted individuals in each treatment until adulthood, the experiment doesn't track the impact these voucher programs had on non-targeted individuals. Thus, the experiment only captured a partial equilibrium of the neighborhood rather than an all-encompassing general equilibrium, which considers both peripheral and focal variables simultaneously.

General equilibrium is critical to recognize for two key reasons. First, the impact of policy on non-targeted individuals can significantly affect political support. Second, peripheral variables still have causal effects on outcomes and thus may reduce policy benefits if tarnished over time or with greater scale. The former, while not concerned with policy efficacy, is nevertheless significant as policies are determined by policymakers who rely on the democratic support of their constituents to remain in office. Without proof that the voucher policies in MTO didn't, and wouldn't if scaled, have adverse effects on incumbent residents of the low-poverty neighborhoods or even other residents of the high-poverty neighborhoods who were left out, voter skepticism and pushback is probable. The latter captures the issues with scalability mentioned previously. If theoretically incumbent residents, who are not considered in the MTO experiment, experience a 0.25% welfare reduction for every family that relocates to their neighborhood, when these effects are scaled from 1-2 families to 100 families, these individuals are suddenly facing major welfare reductions that may motivate them to move out or act differently in a way that reduces the gains of the targeted group identified by Chetty et al..

The final concern to note, common in any overlapping-generation prediction model, is the variability of the long term. While the possibility of increased tax revenue offsetting housing voucher costs in the long run makes MTO-esque reforms appealing, those findings ultimately rely on the accuracy of future income models created by Chetty and his colleagues. While the parameters of these models are extensive, it is near impossible to perfectly replicate current socio-economic realities and even more challenging to predict what those realities will be 50 years from now. The farther in the future these models attempt to predict, the more probable an extraneous variable is introduced into the equation that skews the results. Whether it is a permanent skill premium shock, a nationwide recession, or a global pandemic, the uncertainty of future economic and social conditions grows with time.

While negotiating the pros and cons of the MTO-esque housing voucher policies requires additional considerations, Chetty et al. (2016) nevertheless have laid down the groundwork for future exploration of residential intervention. Chetty and his team hoped others in the field would pick up from where they left off, and luckily, economists Eric Chyn and Diego Daruich did just that. In 2022, the two conducted a similar study exploring neighborhood intervention effects on children via a theoretical general equilibrium model validated against real U.S. data and evidence from literature, including the Chetty et al. (2016) study on MTO. By incorporating general equilibrium considerations, Chyn and Daruich hope to more holistically understand the impacts of neighborhood interventions, not solely on the targeted individuals, but also those in the periphery, which makes their study a valuable addition to the partial equilibrium considerations of Chetty et al. (2016). This model examines both housing voucher and wage subsidy programs, hoping to capture under what circumstances policy interventions are best received and if those effects can be sustained on a larger scale. To achieve this, Chyn and Duruich reduce residential choice to two neighborhoods: endogenously advantaged and disadvantaged. Their framework incorporates endogenous location choice and childhood development to precisely determine how local spillover affects outcomes. After validating their parameters against data from the MTO experiment and the Empowerment Zone program, a federal experimental wage incentive program initiated in 1994, the model was simulated with a range of subsidy rates and intentional socio-economic diversity to determine what increment achieved the greatest welfare gains.

Chyn and Daruich found that when all endogenous factors are considered, fully subsidized housing vouchers targeting households with children below the ninth decile in wages would achieve long-term welfare gains of 4.3% and potential short-term gains of 5.7%. While increased taxation required for this proposal is an immediate general welfare concern, Chyn and Daruich found that the long-term dynamics perfectly compensate for any loss in welfare from taxation. As their analysis explains, "Long-run dynamics increase gains because investing in a child not only improves their skills but also creates better parents for the next generation," (Chyn & Daruich, 2022, p. 3). Wage subsidies are not as fruitful, at best achieving 0.5% welfare gains at an 11% subsidy. Chyn and Duruich, in a secondary analysis of these findings, reveal one caveat. When housing supply elasticity is low, which occurs in areas where it is more difficult to build new housing, as in many major US cities, wage subsidies can achieve up to 2.6% welfare gains with an adjusted subsidy rate. Other notable findings include a 29.4% increase in upward mobility and a 1.4% increase in labor productivity when the ideal housing voucher policy is adopted. As for the optimal wage subsidy, social mobility increases by 21.6% and income inequality is reduced by 8.7%.

Chyn and Daruich significantly build on the original Chetty MTO study as they explore two questions that were not addressed in Chetty et al. (2016): What are the general equilibrium effects of housing vouchers and similar government interventions? What are the effects of scaling such policies? The answers they derive are promising; however, there are still considerations to address before pursuing similar policies in the real world. While I cannot understate the meticulous precision used when constructing the parameters of each economic model to replicate real-world economic dynamics, Chyn and Daruich's model is nevertheless subject to the same scrutiny that Chetty's long-term income model faces. No matter how detailed the models are, policy experts must consider that unaccounted variables are always possible.

For example, in Chyn and Daruich's model, there are only two neighborhoods where individuals live: the endogenously good and endogenously bad neighborhoods. While this simplification was intentional to help produce clearer results, it does not reflect the reality of complex residential webs and inter-neighborhood effects, which can have causal implications on welfare outcomes. These parameters of the model, which don't quite match reality, do not invalidate Chyn and Daruich's findings but rather require policy experts to conduct additional analysis before determining if the uncertainty they produce is negligible compared to the potential welfare benefits.

The uncertainty around findings that are produced by overlapping-generation models, due to long-term variability and parameter inaccuracies, are accompanied by a tertiary concern: the political economy implications specifically in relation to welfare effects in the short term. While Chyn and Daruich make abundantly clear that long-term overall welfare gains are positive, there are significant tradeoffs that implicate both efficacy and political support. Most notably, if every individual calculated their welfare gains from the voucher and wage subsidy policies, 56% and 74% of incumbent adults, respectively, are made worse off to some degree. The average welfare loss of incumbents under the housing voucher policy is 2.5%, while under the wage subsidy, it is 0.24%. The increased taxation experienced by these incumbents for benefits that they don't directly receive is the primary driver of welfare losses. Assuming voters have adequate information and vote in self-interest, both policies may only be politically acceptable if the government borrows money to fund these programs and increases taxation in the future. This strategy would reduce incumbent welfare losses and increase political support. However, deferring the costs to future generations and accumulating debt in the present again introduces the concern of future variability. What if the additional tax revenue of the benefited constituents proves to not be adequate? What if extraneous circumstances prevent the debt from being paid off?

While at first glance, both studies make compelling cases for targeted housing vouchers and wage subsidies, there are several costs of adopting each policy that make them less politically and practically viable. Long-term variability and adverse spillover effects represent unexpected costs that may dampen the benefits of greater social mobility and lower income inequality. Meanwhile, the slight welfare losses experienced by incumbent residents of endogenously good neighborhoods make the political piece quite a challenge as well. The inevitable tradeoffs of each policy require greater investigation but also greater reflection on American values. With both policies relying on long-term positive impacts to justify short-term welfare losses, an important question arises: Should policymakers and voters alike be valuing the possibility of long-term macro-benefits for our nation over short-term decreases in welfare? It is human nature to value the immediate over the far-off, but if these policies were adopted, this short-sighted approach would have to be abandoned. The real answer to the validity of these policy proposals comes down to how Americans value the future compared to the present, and how the right to education ought to be treated when at odds with the welfare of those who are better off.

Conclusion

In this paper, I highlight equity and adequacy concerns with current methods of funding public schools and analyze neighborhood-based solutions scholars have explored to rectify educational, and thus economic, opportunity access disparities. While the discussion of these problems and solutions has led to no singular policy answer, I would like to highlight two key findings to be noted for future research and discussion of this topic.

The first key finding is the importance of targeted and aligned policy measures. The key to successful education policy, as proven by Baker (2018), is to make sure funding is targeted to and received by those who actually need it. The regressive stealth inequities that Baker highlights, from the local property tax relief to the minimum aid requirements, are examples of funding efforts that are not precisely targeted to districts in need. Even if the intent of policymakers was to serve high-need districts with those funding provisions, the language and construction of the provisions themselves are not precise enough to have their intended effect. The stealth inequities also illustrate the importance of alignment, as the provisions were ineffective due to their diametric opposition to general funding formulas. As for the neighborhood-based policies, Chetty et al. repeatedly emphasize their findings indicate housing vouchers are only effective at improving future educational and economic outcomes for families if they are targeted at a specific sub-population that showed the most promising results (low-income families with children below a certain age). Chyn and Daruich also advocate for targeted reforms, with their policy proposal being targeted at a specific sub-population of those in need. To maximize the benefits of reforms and ensure theoretical improvements translate into actual gains, extensive considerations must be made to align policies to target the precise populations they are designed to support.

The second key finding is the paradoxical effect of politics on achieving effective education reform. While the involvement of politics in education funding can be viewed as a way to ensure high-need districts have their voices heard, there is no denying the roadblocks it can also create. Many of the stealth inequities Baker uncovers in state education funding formulas are simply a byproduct of self-interested political compromises. When state representatives from wealthier districts choose to do what is best for their district in the short term, they neglect what is necessary to ensure educational needs and rights are met elsewhere. They also neglect the long-term benefits, such as a healthier economy and greater innovation, that would actually serve to benefit the whole nation, including their districts. Until self-interested politics is either disentangled from or aligned with educational needs, there will continue to be contradictory funding formulas and poor funding distributions across the U.S. A similar issue arises with the predictions of political support for housing voucher and wage subsidy reforms in Chyn and Daruich (2022). Since a majority of incumbent adults experience minor welfare losses, political support for these programs would be a major challenge. However, the question becomes: Is it just for the short term self-interest of better-off populations to hinder the rights of low-income families to adequate educational and economic opportunity from being met? If not, how can education politics be formulated going forward to reach the proper conclusion in conflicts of interest? Exploration of these questions is essential to making meaningful progress on this issue. While funding and experimental neighborhood-based interventions are just the tip of the iceberg regarding the many facets of education access, governance, and provision, exploring these debates is vital to making the American and human education ideals we so closely value a permanent reality.

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