An Evaluation of the CDBG Formula's Targeting to Community Development Need

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Community Development Block Grant: Targeting to Need?

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With these many thanks, any shortcomings or mistakes in this report are solely our own.

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Executive Summary

The Community Development Block Grant (CDBG) program provides approximately $3.5 billion in flexible grants annually to cities, states, and counties to support community development activities and build stronger and more resilient communities. The formula used to allocate CDBG funds has not changed in more than 40 years, despite several reports since 1977 noting factors in the current formula that result in it inequitably targeting funds. An equitable formula under the CDBG program would distribute funds proportional to an area's community development needs as implied by the statutory objectives of the CDBG program to develop "viable urban communities, by providing decent housing and a suitable living environment and expanding economic opportunities, principally for persons of low and moderate income."[1] The U.S. Congress requested this report as an update to past reports to determine if CDBG funds are accurately targeting communities with the most pressing needs and the least ability to address those needs with their own resources.

The current "dual" formula awards entitlement (city and county) jurisdictions the greater amount based on their performance on two formulas. Formula A has a 50-percent weight on number of persons in poverty, a 25-percent weight on total population, and a 25-percent weight on number of households overcrowding. Formula B has a 50-percent weight on the number of housing units built before 1940, a 30-percent weight on the number of persons in poverty, and a 20-percent weight on population growth lag from 1960. The formula splits funds such that entitlement communities are allocated 70 percent of the appropriated funds, and nonentitlement (state grantees getting funding for smaller communities in the balance of state minus entitlements) areas are allocated the other 30 percent. The nonentitlement formula B substitutes the growth lag factor for population. States are allocated the nonentitlement portion of the CDBG allocation for their state, and they then determine how to distribute that money across nonentitlement areas within their state.

In 1979, just a year after the current dual formula was adopted, the U.S. Department of Housing and Urban Development (HUD) published a report finding that some elements in the formula resulted in different allocations for places with similar levels of need. Since then, at least one report has been published each decade, outlining how problems in the targeting of the formula have grown worse over time. This report also finds significant problems that have eroded the formula's equitable distribution of funding to places of similar need over time. An update to the formula could increase resources to some jurisdictions that are currently underfunded relative to their needs while reducing funding to lower-need places that have received significantly higher grants relative to their need due to the factors used in the formula. These changes would support a fairer allocation of resources and could deepen the impact of the program.

Assessing how well an allocation formula responds to community need requires a way to measure community need accurately and objectively. To address this issue, this report constructs a "community needs index" similar to past reports that distills 20 variables for CDBG areas associated with community development needs into one score for every jurisdiction receiving funding under the CDBG formula.

Applying the community needs index shows that the current CDBG allocation formula generally allocates funding in proportion to need, but the allocation has large inconsistencies. Many jurisdictions with similar levels of need receive significantly different allocations. This inequity is mostly due to the dual formula structure. Relatively few communities have high levels of aging housing stock and/or slow population growth (or population loss), so those communities tend to receive large allocations under formula B, much greater than what their formula A allocation would be. However, formula A factors do

[1] 42 U.S. Code § 5301.

not have the same concentration of data points (notably population and poverty), so a similarly needy community under formula A will ultimately get a smaller allocation than a community funded under formula B. In addition, some low-need communities, including wealthy suburbs, receive large per-capita grants due to factors in the current formula that do not accurately capture need.

This report finds several problems with the current formula that contribute to inconsistent targeting based on community development needs. Those problems are:

- College students. The poverty factor in both formula A and formula B includes college students, who are often treated as persons living below the poverty line. This results in levels of funding to college towns that are disproportionately high relative to need.
- Population. High-need formula A grantees are undertargeted due to the inclusion of the population variable, which is not itself an indicator of need. The use and weighting of population in formula A narrows the distribution of per-capita distributions so that high-need areas receive less than their needs indicate, and low-need areas receive more.
- Pre-1940 housing. Pre-1940 housing was included in formula B in 1977 to represent costs associated with aging infrastructure, but older housing does not necessarily correspond with either aging infrastructure or high need. The use and weighing of pre-1940 housing in formula B results in disproportionately high levels of funding relative to need for places with old housing occupied by high income households.
- Growth lag. Growth lag, also used in formula B, provides higher levels of funding to places that have had slower population growth than all metropolitan areas since 1960. Although growth lag does allocate funds to many very high-need communities, such as Detroit, it also allocates significant funding to communities that are high income and have adopted policies to actively discourage new housing development that would support population growth.
- Dual formula. Formula A grantees receive significantly less than formula B grantees of similar need partly because of the complicated mechanics of a dual formula method and the concentrated nature of growth lag and pre-1940 housing (formula B factors). Formula B grantees contain about one-third of the population but contain over three-fourths of growth lag and pre-1940 housing, resulting in formula B grantees performing extremely well on formula B.
- The 70–30 entitlement and nonentitlement split. Entitlement areas benefit from the 70–30 split between nonentitlement and entitlement areas because nonentitlement areas compose greater than 30 percent of the nation's overall community development need.
- Weighting of poverty. Poverty is underweighted in the current formula relative to its importance in the community development needs index. The poverty factor distributes just 30 percent of the funds currently, despite being the one variable most associated with the other variables in the community development needs index and the variable most widely recognized as representing community needs.

A couple of examples illustrate the problem with the current formula. San Sebastian Municipio, Puerto Rico, has a 50-percent poverty rate and a median household income of $15,995 but receives only $32 in CBDG funds per person living in poverty. However, Haverford, Pennsylvania, has a 3-percent poverty rate and a median household income of $114,554 but receives $461 in CDBG funds per person living in poverty. Pre-1940 housing and growth lag drive Haverford's high allocation, yet Haverford does not have high community needs. Similarly, Arlington, Massachusetts, with a poverty rate of 5 percent and a median household income of $125,000, receives $448 per person living in poverty. Meanwhile, Hattiesburg, Mississippi, has a poverty rate of 28 percent and a median household income of $36,000 but receives only $37 per person living in poverty. The pre-1940 housing variable drives Arlington's allocation.

The current CDBG allocation formula's ability to fairly target funds to places with similar need has degraded substantially each decade that new data have been introduced. CDBG funding overall has also declined in real dollars: today it provides 76 percent less funding than what it allocated in 1978 on an inflation-adjusted basis. If CDBG appropriations had kept up with both inflation and population growth, it would be a $21.3 billion program today. The current modest funding level for CDBG requires a more efficient use of the funds.

A better targeted and fairer formula could create improvements in both equity and efficiency. This report offers considerations for updating the current formula to better target community development needs. These considerations stem from past research, the statutory objectives of CDBG, and new analysis using the community needs index.

Another important factor for policymakers to consider when updating the current formula is that the decline of funding for the CDBG program in real dollars over the past several decades will make any future adjustment to the current formula more difficult and felt more acutely by high-need places that would lose funding. Congress must consider that any change to the current formula will result in losses to some jurisdictions. The only way to simultaneously make the allocation formula fairer and avoid loss of funding to jurisdictions would be to increase funding for the CDBG program.

HUD's homelessness programs rely on the CDBG formula. HUD does not recommend implementing any formula updates without divorcing the CDBG formula from the Emergency Solutions Grants (ESG) allocations and Continuum of Care allocations. The goals of CDBG and homelessness programs are distinct and may require different factors to be properly targeted.

CDBG funds are a scarce resource that should be allocated to optimize effect, yet the formula continues to decline in ability to target need and decline in real dollars to meet rising needs. If left untouched, the problem will only worsen. This report provides Congress with recommendations if Congress were to consider proposing a new formula. These recommendations would more efficiently allocate funds to the communities with the most pressing community development needs and the least ability to address those needs.

Chapter 1. Introduction

Purpose of the Report

This report assesses how well the Community Development Block Grant (CDBG) formula allocates funds to community needs to best achieve the statutory objectives of the Housing and Community Development Act of 1974 to develop viable urban communities and expand economic opportunities, principally for low- and moderate-income individuals. In 2005, HUD published a report titled "CDBG Formula Targeting Community Development Need." This report updates the prior work using the most recent data. The report responds to Congress's direction in the Joint Explanatory Statement accompanying the fiscal year 2022 Appropriations Act:

> The Committee is concerned that the CDBG distribution formulas are not accurately targeting communities with the most pressing needs and the least ability to address those needs with their own resources. The Congress explored revising formulas during 2005 and 2006, but no legislation was ever passed. In order to revisit the question, the Committee directs HUD to update the 2005 report titled ''CDBG Formula Targeting to Community Development Need'' in order to analyze the current formula's effectiveness in meeting the goals of the CDBG program and if it is meeting those goals equitably.[2]

This report builds upon decades of research on the CDBG allocation formula.

1. A report Congress requested in 1976 provided evidence that the proposed (and now current) "dual formula"[3] would target community development need better than the formula of the time (Bunce, 1976). The Brookings Institution also published a report in 1977 that proposed a dual formula system to increase targeting to big cities experiencing urban distress (Nathan et al., 1977). These reports contributed to Congress's decision to adopt a new dual formula system in 1978.
2. The year after the implementation of the new 1978 formula, a followup report found that the new formula was well-targeted to need but also identified alternatives that may perform better (Bunce and Goldberg, 1979).
3. Following the introduction of new census data in 1980, Bunce, Neal, and Gardner (1983) found a decline in the extent to which the current formula was targeted to need. They identified several funding anomalies of concern that resulted in similarly needy communities receiving significantly different per-capita funding.
4. Using 1990s data, Neary and Richardson (1995) continued to find a decline in targeting need in the current formula.
5. Richardson (2005) conducted a congressionally mandated assessment and found flaws in the formula using 2000 census data; the report recommended a slate of alternative formulas.
6. Collinson (2014) constructed a needs index spanning three decades to show that the formula's targeting to need worsened over time.
7. Now, 45 years after the implementation of the dual formula, this report builds on decades of evidence to reassess the targeting of the CDBG formula to its statutory objectives.

[2] House Report 117-99.

[3] A dual formula is such that grantees are scored under two separate formulas and receive the greater amount between the two formulas.

CDBG Background

The CDBG program is one of HUD's longest running programs, and it is the Department's largest annual block grant. It originated with the Housing and Community Development Act of 1974, which folded seven categorical federal grants into one block grant to provide localities with the flexibility to spend money toward their community needs. Different federal agencies, each with their own specific objectives and eligible activities, previously administered these grants. By consolidating these programs into a single block grant, the CDBG program made it easier for communities to access funding for a variety of community development and affordable housing projects and provided more flexibility to control the use of federal funds.

In the Housing and Community Development Act of 1974, Congress clarified that the "primary objective" of the CDBG programs is "the development of viable urban communities, by providing decent housing and a suitable living environment and expanding economic opportunities, principally for persons of low and moderate income." [4] The CDBG program has three national objectives: 1. Principally benefit low- and moderate-income families, 2. Aid in the prevention or elimination of slums or blights, and 3. Use funds for activities that meet urgent need.

The statute also outlines more specific objectives for the program, including:

1. The elimination of slums and blight, the prevention of blighting influences, and the deterioration of property and neighborhood and community facilities of importance to the welfare of the community, principally for persons of low and moderate income.
2. The elimination of conditions that are detrimental to health, safety, and public welfare through code enforcement, demolition, interim rehabilitation assistance, and related activities.
3. The conservation and expansion of the nation's housing stock to provide decent homes and suitable living environments for all persons, but principally for those of low and moderate income.
4. The expansion and improvement of the quantity and quality of community services, principally for persons of low and moderate income, which are essential for sound community development and the development of viable urban communities.
5. A more rational use of land and other natural resources and the better arrangement of residential, commercial, industrial, recreational, and other needed activity centers.
6. The reduction of the isolation of income groups within communities and geographical areas, the promotion of an increase in the diversity and vitality of communities through the spatial de-concentration of housing opportunities for persons of lower income, and the revitalization of deteriorating or deteriorated neighborhoods.
7. The restoration and preservation of properties of special value for historical, architectural, or aesthetic reasons.
8. The alleviation of physical and economic distress through the stimulation of private investment and community revitalization in areas with population out-migration or a stagnating or declining tax base.
9. The conservation of the nation's scarce energy resources, improvement of energy efficiency, and the provision of alternative and renewable energy sources of supply.

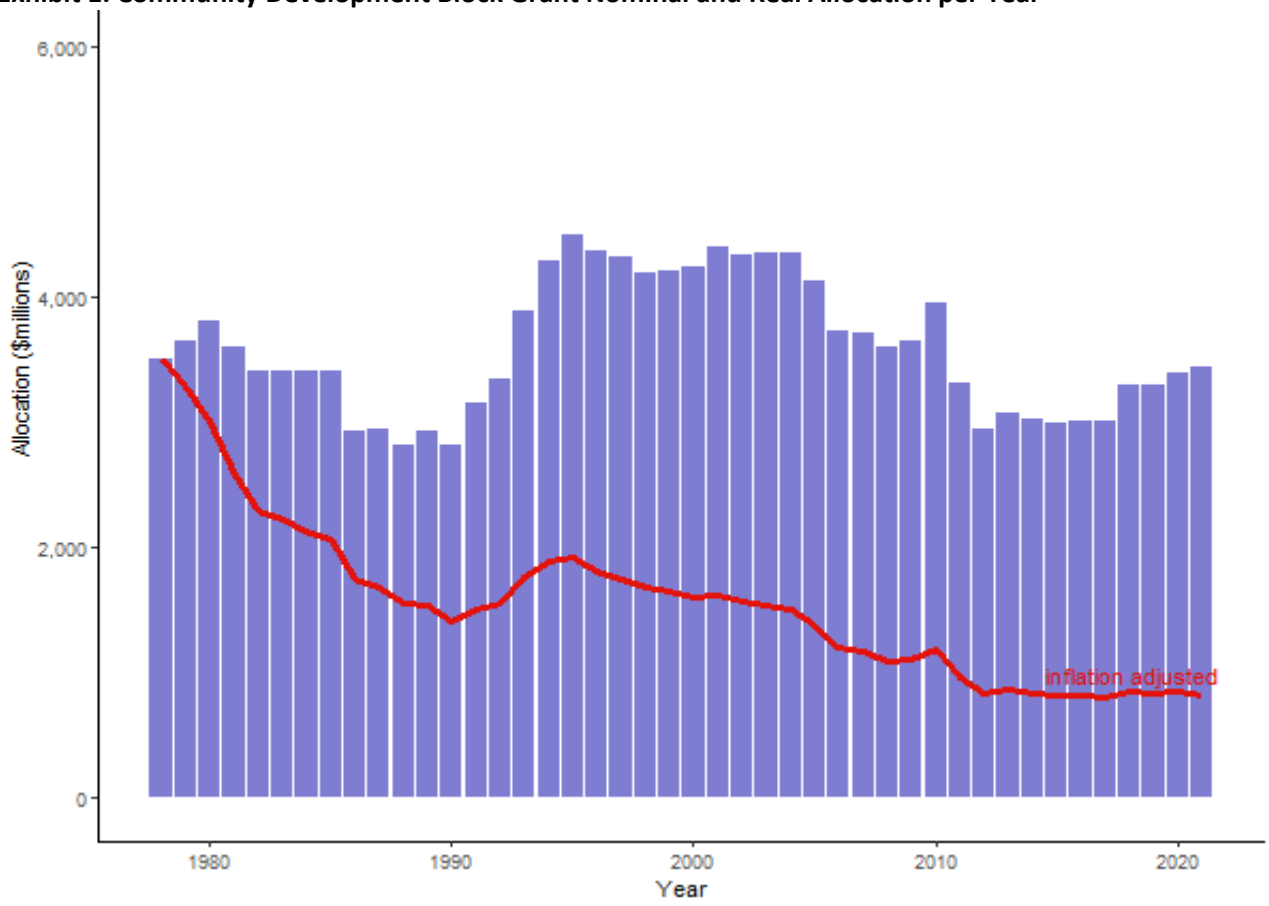
Exhibit 1 illustrates the annual CDBG allocations, excluding supplemental appropriations, in nominal dollars from 1978 to present. In total, CDBG has allocated more than $158 billion (in nominal dollars) since 1978. This funding has supported community development and housing projects, such as

[4] 42 U.S. Code § 5301.

affordable housing construction, infrastructure improvements, and economic development initiatives across the nation.

The line running left to right through the bars on the graph represents the allocation in real dollars, adjusted for inflation. In fiscal year 2021, $3.4 billion was distributed, which is equivalent to $835 million in 1978 dollars. This amount is compared with the $3.5 billion allocated in 1978. The data show that the nominal value of CDBG allocations has remained relatively constant over time, but when adjusted for inflation, the real value has declined significantly. CDBG has just one-fourth of the purchasing power it once had.

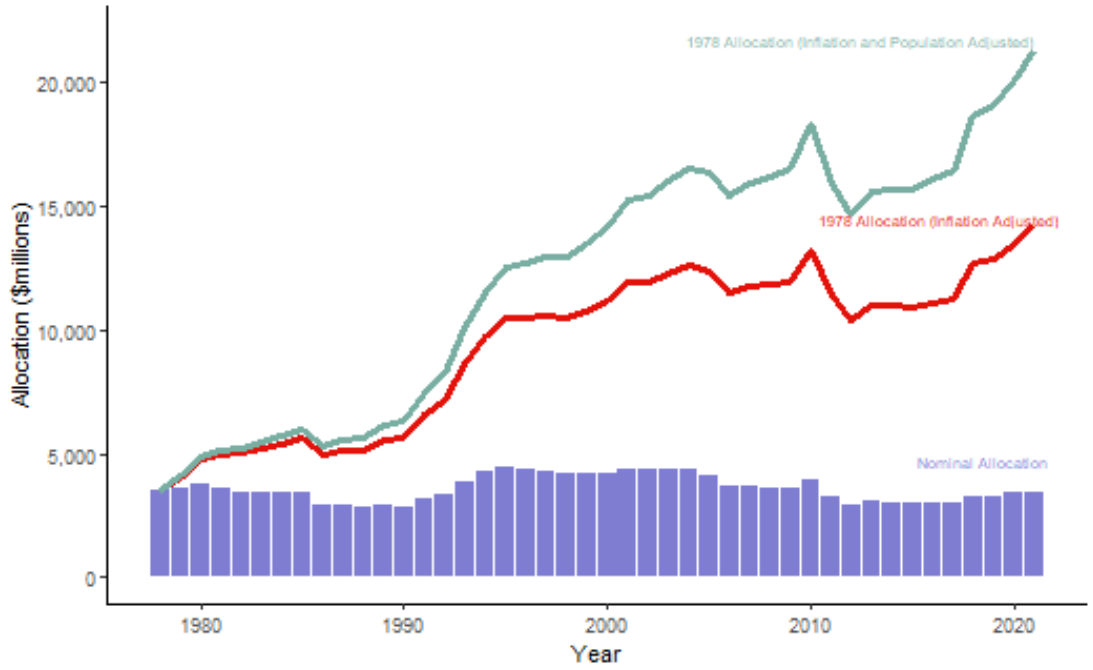
Exhibit 1. Community Development Block Grant Nominal and Real Allocation per Year



Sources: Office of Policy Development and Research analysis of HUD administrative data; U.S. Bureau of Labor Statistics Consumer Price Index data

Exhibit 2 illustrates what the allocation would have been yearly had the allocation kept track with inflation and population trends. The lower line on the graph represents the amount of CDBG funding that was allocated in 1978, adjusted for inflation during the same period. CDBG allocations have not kept pace with inflation, and the purchasing power of the CDBG funding has decreased over time as the cost of goods and services has increased. In fiscal year 2021, CDBG allocated $3.475 billion, which would have been $14.2 billion if CDBG funding had tracked with inflation. Exhibit 2 again shows the divergence between the purchasing power of CDBG in 1978 and the current purchasing power.

Exhibit 2. Community Development Block Grant Nominal Allocation per Year and Inflation- and Population-Adjusted 1978 Allocation per Year



Sources: Office of Policy Development and Research analysis of HUD administrative data; U.S. Bureau of Labor Statistics Consumer Price Index data

The higher line on the graph represents the amount of CDBG funding that would be allocated across time if the real allocation per capita were the same as the allocation in 1978. In 1978 dollars, the real allocation per capita in 1978 was $15.70, and in 2021, the real allocation per capita was $2.50. In fiscal year 2021, CDBG allocated $3.475 billion, which would have been $21.3 billion if the allocation had remained constant for inflation and population trends. The CDBG program has significantly less purchasing power to service significantly more people. All told, CDBG is a scarce resource that needs to be well-targeted to the communities that need it the most, and among those communities needing it the most, each should get their fair share of the funds.

The CDBG formula has been used for supplemental appropriation allocations periodically, usually in response to economic crisis. Some of these uses have exceeded the total amount of the annual appropriations. For example, Congress allocated $5 billion through the Coronavirus Aid, Relief, and Economic Security (CARES) Act in the wake of the coronavirus pandemic to offset economic impacts for cities, counties, and states through the CDBG-CARES Act, or CDBG-CV program; these funds were partially allocated according to the CDBG formula.[5] The U.S. Department of the Treasury's American Rescue Plan Fiscal Relief Funds allocated $45.57 billion to metropolitan cities using the CDBG formula.[6] In addition to the importance of improving the targeting of the regular CDBG program, improving the formula for targeting would benefit future supplemental appropriations that use the CDBG formula.

The CDBG formula is also used for targeting homeless resources, a use the current formula had not contemplated. For example, the Emergency Solutions Grants (ESG) program funds are allocated proportionally to the CDBG formula allocation from the prior fiscal year.[7] The formula is also used to

[5] https://crsreports.congress.gov/product/pdf/IN/IN11523.
[6] https://home.treasury.gov/system/files/136/Allocation-Methodology-for-MetropolitanCities-508A.pdf.
[7] 42 USC 11373.

calculate Preliminary Pro Rata Need for the Continuum of Care competitive funds.[8] These programs' objectives are distinct from community development and are not considered throughout the report nor in the construction of a new formula. Although this report does not explore how well the CDBG formula targets to homeless needs, the authors recommend that such research be undertaken in the future to determine if the CDBG formula is appropriate for allocating resources to address homelessness.

[8] 24 CFR Part 578.17.

Chapter 2. Community Development Block Grant Formula

The Community Development Block Grant (CDBG) formula allocates funds annually to areas across the United States. The statute dictates that 1 percent of the allocation be used for the Indian CDBG (ICDBG), which is allocated under an agreement among Native American tribes. Recently, Congress has allocated ICDBG funds to HUD's Office of Native American Programs directly in appropriations and has made ICDBG a competitive grant. Therefore, the 1 percent is typically no longer deducted from the CDBG allocation.[9] Furthermore, $7 million is set aside for insular areas: American Samoa, Guam, the Northern Mariana Islands, and the Virgin Islands.

In 1974, the first iteration of the CDBG formula allocated funds by population (25 percent), poverty (50 percent), and overcrowding (25 percent). The Brookings Institution conducted a report to evaluate the fairness of this allocation in 1977. The report concluded that the formula focused too much on poverty and failed to capture urban distress, so the authors proposed creating a dual formula system whereby jurisdictions were entitled to the larger of the amounts the two formulas calculated (Nathan et al., 1977). Bunce (1976) also proposed a dual formula and constructed a complementary formula that included population growth lag and pre-1940 housing variables to capture urban distress. The creation of the dual formula system kept the prior formula and added Bunce's complementary formula alongside a "no losers" provision so that no jurisdictions would lose money from the changed formula.

In evaluating fairness in targeting communities with the most pressing needs, this report is not confined to the original motivation of the CDBG formula. The two seminal papers in the creation of the current CDBG formula explicitly sought to allocate more funds to urban areas (Bunce, 1976; Nathan et al., 1977). The reasoning was that under the 1974 single formula, CDBG funds disproportionately went to "low-income but growing cities in the South while decreasing the proportion going to the declining cities in the Northeast and North Central regions" (Bunce, Neal, and Gardner, 1983). As this report will show, this intentional targeting was achieved, and the relationship between the current allocation formula and community needs has weakened over time.

Taking the results from the report, Congress designed and approved the current formula in 1977, a two-part (dual) formula split between two pots of money: 70 percent of CDBG funds are allocated to entitlement communities (metropolitan cities and urban counties), and 30 percent of CDBG funds are allocated to states (based on the nonentitlement areas contained within the state). Jurisdictions qualify as entitlement communities if they meet any of these three criteria:

1. A metropolitan city, either as designated by the Office of Management and Budget as the central city of a metropolitan area or through a population of 50,000 or more.
2. An urban county with a population of 200,000 or more, of which 100,000 or more citizens are contained outside metropolitan cities, as criteria one defines.
3. Counties or cities that retain qualification status because of previously meeting criteria as an entitlement community.

Each jurisdiction is scored in relation to each other under two formulas: A and B. Jurisdictions are allocated money according to the formula that grants them more money. Although each jurisdiction is computed only for two formulas, the formulas vary by jurisdiction based on entitlement status and community or city distinction. County variables are calculated using the sum of the variables at the county level and subtracting the sums from entitlement cities contained within the county.

[9] In fiscal year 2022, $72,086,000 was allocated under the ICDBG, and $3.3 billion was allocated under the CDBG appropriations. The ICDBG allocation was slightly more than 2 percent of the CDBG allocation.

Formula A for entitlement communities is as follows:

$$\left[0.25 * \frac{Pop_a}{Pop_{MA}} + 0.5 * \frac{Pov_a}{Pov_{MA}} + 0.25 * \frac{Ocrowd_a}{Ocrowd_{MA}}\right] \; x\, 0.7 * total\_alloc$$

Formula B for cities is as follows:

$$\left[0.2 * \frac{GLag_a}{GLag_{MC}} + 0.3 * \frac{Pov_a}{Pov_{MA}} + 0.5 * \frac{Age_a}{Age_{MA}}\right] \; x\, 0.7 * total\_alloc$$

Formula B for urban counties is as follows:

$$\left[0.2 * \frac{GLag_a}{GLag_{ENT}} + 0.3 * \frac{Pov_a}{Pov_{MA}} + 0.5 * \frac{Age_a}{Age_{MA}}\right] x\, 0.7 * total\_alloc$$

Where—

- *(a)* is the value for the jurisdiction.
- *(MA)* is the value for all metropolitan areas.
- *(MC)* is the value for all entitlement cities.
- *(ENT)* is the value for all entitlement jurisdictions (cities and urban counties).
- *(NENT)* is the value for all nonentitlement jurisdictions (counties and states).
- $3.3 billion is the amount available for allocation to entitlement communities in fiscal year 2022.
- *Pop* is the total resident population.
- *Pov* is the number of persons below the poverty level.
- *Ocrowd* is the number of overcrowded housing units. A housing unit is overcrowded when more than 1.01 persons per room are living in the unit.
- *Age* is the number of housing units built before 1940.
- *GLag* is population growth lag. Growth lag is the shortfall in population that a city or county has experienced when comparing its current population with the population it would have had if it had grown like all metropolitan cities since 1960. For the fiscal year 2022 formula allocation, the growth rate for all entitlement communities between 1960 and 2022 was 61.2 percent. If a city or county grew at a rate greater than or equal to 61.2 percent between 1960 and 2000, it receives a growth lag value of zero.

Allocations are awarded differently for states for use in nonentitlement communities. The nonentitlement formulas have two primary differences. First, both formulas A and B use population variables, and second, the denominators shift to becoming the sum of nonentitlement areas. Nonentitlement areas are calculated using the sum of the variables at the state level and subtracting the sum of those variables accounted for by entitlement communities within those jurisdictions. Urban counties exclude counts from Native American territory, which is allocated based on the Indian CDBG.

Formula A for nonentitlement communities is as follows:

$$\left[0.25 * \frac{Pop_a}{Pop_{NENT}} + 0.5 * \frac{Pov_a}{Pov_{NENT}} + 0.25 * \frac{Ocrowd_a}{Ocrowd_{NENT}}\right] x\, 0.3 * total\_alloc$$

Formula B for nonentitlement communities is as follows:

$$\left[0.2 * \frac{Pop_a}{Pop_{NENT}} + 0.3 * \frac{Pov_a}{Pov_{NENT}} + 0.5 * \frac{Age_a}{Age_{NENT}}\right] x\, 0.3 * total\_alloc$$

Because each jurisdiction is subject to the greater allocation of their computed formulas, the total allocation after selecting each jurisdiction's greater value will exceed the total allocation appropriated for the fiscal year. Therefore, after computation, an adjustment factor is applied to ensure that entitlement communities do not exceed 70 percent of the CDBG appropriation and nonentitlement do not exceed 30 percent of the CDBG appropriation. In fiscal year 2022, the pro-rata reduction was 14 percent for entitlement communities and 17 percent for nonentitlement communities. Therefore, grantees' allocations under the larger of the two formulas were multiplied by 0.86 and 0.83, respectively, to calculate the awarded amount.

The formula for allocations is based on the most recent census data available. The most recent American Community Survey (ACS) 5-year data are used for most factors: population and growth lag use, the decennial census, or the most recent population estimates, depending on which is more recent. The ACS 5-year data are updated on an annual basis. The data usually take about 3 years to become available. For the fiscal year 2022 allocation, 2015–2019 ACS data were used.

Four decades of research have identified specific features in the current formula allocation process that result in suboptimal targeting of community need. These reports have demonstrated these problems in the formula both through explanatory data and the construction of a community needs index, interspersing both through their reports. This report not only uses an updated community needs index to assess the formula's targeting, but it also provides analysis beyond the needs index to show why each of the identified problems is reducing targeting. Chapter 3 first constructs the community needs index, and chapter 4 leverages the community needs index to demonstrate the lack of targeting in the current formula. Chapter 5 then analyzes how the current formula factors contribute to inequity and imprecise allocation of CDBG funds without drawing on the community needs index. Chapter 5 concludes with a series of recommendations on how to better target the formula.

Chapter 3. Community Needs Index

Assessing how well an allocation formula responds to community need requires a way to measure community need accurately and objectively. This chapter describes a single metric, developed by the authors and based on past research, that defines "community development need," the theoretical level of need that communities that receive CDBG program funds have based on the best available data. To create a single metric, more than 20 variables are distilled into three factors, and each CDBG area is assigned a score associated with each factor. Each factor is then assigned a weight, and each CDBG area is given a score according to the weighted sum of their factors. The variables input into the equation were inspired by the statutory objectives of the CDBG program as described in Chapter 1.

Factor Reduction

Because community needs encompass many different variables, past analyses of the CDBG formula have constructed a community needs index using factor analysis (Bunce, Neal, and Gardner, 1983; Collinson, 2014; Richardson, 2005). This method reduces many variables into latent structures or "factors." The number of factors is user-defined; past studies have chosen to resolve their variables into three factors. Direct definitions or understanding of these factors is difficult because they each comprise several different variables. Past studies have broadly identified the factors as one associated with poverty, another with aging housing stock, and a third relating to communities in decline (Bunce, 1976; Bunce, Neal, and Gardner, 1983; Neary and Richardson, 1995). Richardson (2005) differentiates the categorization of these factors, molding the former three into one factor on poverty and introducing two new categorizations: overcrowding and concentrated poverty. Collinson (2014) finds factors that can be categorized best as poverty, weak labor market, and concentration of need. All these categorizations are interpretations of the factors.

Factor analysis identifies patterns in the correlations between variables and extracts a smaller number of factors that explain most of the variance in the data. These factors can then be used to create a composite score, or index, that reflects the overall needs of the community based on the underlying factors that have been identified. This report also uses factor analysis to construct the needs index and relies on its own interpretation of the factors based on new data presented in this chapter: poverty, aging housing stock, and concentrated needs. To construct the index, each factor needs to be weighed and summed. This report assigns a 70-percent weight to poverty, a 20-percent weight to communities in decline, and a 10-percent weight to concentrated needs.

Variables

This report draws on data from the American Community Survey (ACS), the U.S. decennial census, and the U.S. Bureau of Labor Statistics (BLS) to construct a community needs index. It is the first report to construct a needs index that captures all CDBG geographies. Past reports have separated entitlement and nonentitlement areas. The report uses special tabulations from the U.S. Census Bureau tabulations at the 070-summary level of 2015–2019 ACS 5-year data (state, county, county subdivision, place remainder [or part]). The Office of Community Planning and Development provides a crosswalk from the 070 level to CDBG geographies. Other census variables were calculated using National Historical Geographic Information System tract-level data from 2015–2019 ACS data computed at the county level and applied to all CDBG jurisdictions within the county, including the county. Finally, labor data from the BLS Local Area Unemployment Statistics were provided at the state, county, and city level. All data come from 2019 figures; that year is the most recent year with all datasets available and the most recent year with a crosswalk from 070 summary level data to CDBG geographies at the time of compiling this report (exhibit 3).

Exhibit 3. Variables Included in the Community Needs Index

Variable	Source
Percent of pre-1980 housing occupied by a household in poverty	ACS (Census Special Tabulation)
Percent of vacant, pre-1980 housing	ACS (Census Special Tabulation)
Percent of housing overcrowded	ACS (Census Special Tabulation)
Percent of age 25+ with a bachelor's degree	ACS (Census Special Tabulation)
Drop-out rate age 18–25	ACS (Census Special Tabulation)
Poverty rate (not including college students)	ACS (Census Special Tabulation)
Percent of households with single parent	ACS (Census Special Tabulation)
Ratio of metro mean household income to municipal mean household income	ACS (Census Standard Tabulation)
Percent in high-poverty census tracts (county level)	ACS (Census Standard Tabulation)
Dissimilarity index	ACS (Census Standard Tabulation)
Percent change in dissimilarity index in the past 10 years	ACS (Census Standard Tabulation)
Poor persons in high vacancy census tracts (county level)	ACS (Census Standard Tabulation)
Change in percent poverty (10 years)	ACS (Census Standard Tabulation)
Population change (30 years)	ACS (Census Standard Tabulation) and U.S. Decennial Census
Population change (10 years)	ACS (Census Standard Tabulation) and U.S. Decennial Census

Percent of households without broadband access	ACS (Census Special Tabulation)
Income inequality (Gini index)	ACS (Census Special Tabulation)
Median household income	ACS (Census Special Tabulation)
Employment-to-population ratio	LAUS
Unemployment rate	LAUS

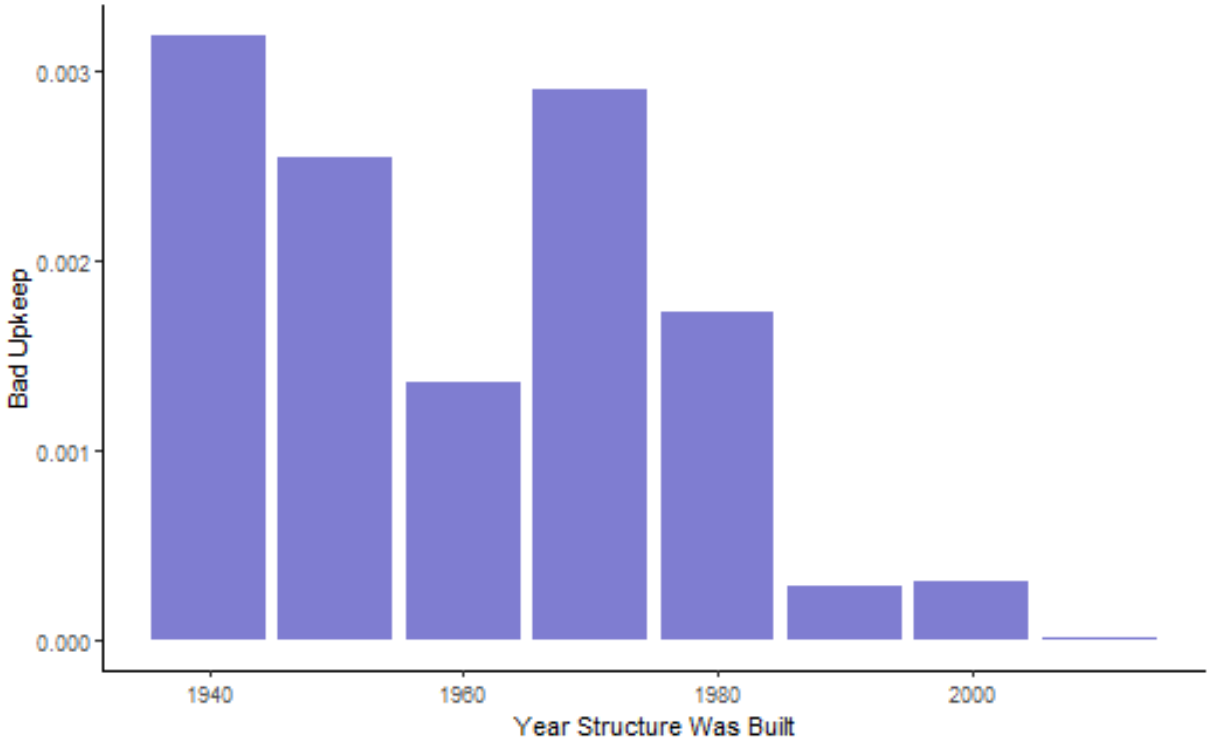
ACS = American Community Survey. LAUS = Local Area Unemployment Statistics.
Source: ACS Census Special Tabulations pulled from the National Historical Geographic Information System

Pre-1980 Housing

Aging housing is a signifier of community needs; old houses may need relatively more repairs than newer units, or the community will need to replace them. Evidence from the American Housing Survey suggests that there is a significant increase in houses experiencing maintenance issues as they become 40 years old. Exhibit 4 shows the share of housing units having greater than five maintenance issues (defined in the American Housing Survey as "bad upkeep") by the year the structures were built.[10] Richardson (2005) and Collinson (2014) restrict variables on dated housing to those occupied by low-income renters. This report restricts the variable to pre-1980 housing occupied by low-income households regardless of tenure.

[10] Maintenance issues are (1) water leaks from the outside, such as from the roof, basement, windows, or doors; (2) leaks from inside structure, such as pipes or plumbing fixtures; (3) holes in the floors; (4) holes or open cracks in the walls or ceilings; (5) more than 8 by 11 inches of peeling paint or broken plaster; or (6) signs of rats in the past 90 days.

Exhibit 4. Bad Upkeep by Year Structure Was Built



Source: Office of Policy Development and Research analysis of American Housing Survey data

Overcrowding

Overcrowding, or having more than one resident per room in a housing unit, is associated with individuals' ability to afford housing, density of neighborhoods, and health and safety consequences. The variable was identified in the original formula and remains a good indicator of community need. Bunce (1976) and Richardson (2005) note that overcrowding is a good indicator of (1) disposal and sanitation problems, (2) high demand for recreational facilities, (3) density of the population, (4) excess demand for housing, and (5) unique strains on local government populations from growing immigrant populations. In addition, overcrowded housing is linked to health impacts because it increases the risk of communicable disease and is associated with increased food insecurity at the household level. Children in overcrowded households experience negative effects on math and reading achievement (Cutts et al., 2014; Solari and Mare, 2012). According to Comprehensive Housing Affordability Strategy data, 3.04 percent of occupied housing units were overcrowded in 2009, and 3.35 percent were overcrowded in 2019. Huntington Park, California, hosts the highest rates of overcrowding, with 31.9 percent of households being overcrowded. Nine of the top 10 CDBG geographies with the highest overcrowding rates were in California, with rates above 16 percent.

College Education

Education is a proxy for opportunity and economic robustness. Higher levels of education are generally associated with greater access to job opportunities, higher salaries, and better quality of life. A well-educated population is often a key indicator of a country or region's economic strength because it indicates a skilled and knowledgeable workforce that is better equipped to drive innovation and productivity. Education is also closely linked to social mobility because it provides individuals with the knowledge and skills necessary to move up the socioeconomic ladder. According to Bureau of Labor

Statistics data, the median earnings for bachelor's degree holders are 84 percent higher than for those holding a high school diploma.

Dropout

Individuals who drop out of high school have less access to economic opportunity and can strain public resources. High levels of people who have dropped out of high school indicate struggling education systems and higher levels of crime (Maynard, Salas-Wright, and Vaughn, 2015). Further, people who drop out of high school have less income and contribute less tax revenue to the city and state (Carroll and Erkut, 2009). Compared with those who graduate from high school, people who drop out of high school are more likely to be in poverty, suffer adverse health outcomes, have encounters with the criminal justice system, and consume public resources (Belfield and Levin, 2007; Rumberger, 2011).

Poverty Rate

Localities with high levels of poverty face a double-edged sword. They spend a higher proportion of their budgets on those in poverty while deriving less in tax dollars. The statute makes clear that the funds should primarily benefit low- and moderate-income individuals. Poverty is highly correlated with almost all other variables in the community needs index. This report excludes college students in calculating poverty.[11]

Single Parent

Single-parent households often face financial and practical challenges that may not be present in two-parent households, which in turn leads to a greater demand for public services. Areas with single-parent households experience more crime, and children of single-parent households are more likely to be involved with the criminal justice system (Kroese et al., 2021). Although single-parent families may require greater need, such as extracurricular activities for children, localities also face decreased revenues from single-parent families.

Metropolitan Mean Income Ratio

This study takes from Richardson's (2005) introduction of a relative per-capita income to the metropolitan mean income, extending David Rusk's (1993) research showing "the city-suburb per-capita income ratio is the single most important indicator of an urban area's social health." The variable captures the needs of communities compared with their neighbors, which in some senses captures varying prices across regions of the United States. The metropolitan mean income represents the costs of providing services (through labor inputs), and the place mean income represents the tax base for the jurisdiction to afford those services. A lower ratio means the jurisdiction faces higher costs per revenue than other neighboring jurisdictions.

High-Poverty Census Tracts

Impoverished individuals living in high-poverty census tracts captures economic segregation across a county. The CDBG objectives call for the "reduction of the isolation of income groups within communities." Concentration of poverty leads to negative externalities, including increased crime, lower economic mobility, and poor health outcomes (Sampson, 2012; Sharkey, 2013). The issue of

[11] Although college students are excluded from this variable, they still impact the factor analysis in other variables for which removing their consideration was not feasible. These variables include overcrowding, pre-1980 occupied by low-income residents, percent of people in high-poverty census tracts, poor persons in high-vacancy census tracts, and median household income. Other variables may include college students when it reasonably makes sense, such as dissimilarity and income inequality, for which college students should be included.

concentrated poverty has primarily occurred in urban areas (Shapiro, Murray, and Sard, 2015); however, rural areas face increasing concentrations of poverty (Farrigan, 2022).

Dissimilarity Index

The dissimilarity index is constructed by calculating the number of people who would have to move between census tracts to make each census tract proportional to the county-level racial demographics. A score of zero represents complete integration, and a score of one represents complete segregation. To weigh this variable, the dissimilarity index is multiplied by the percentage of non-White individuals in the county. Richardson (2005) points out that, although prior studies separated the percentage of non-Whites and the dissimilarity index as two separate inputs to the model, combining the two variables does a better job of identifying the amplified need for places with large minority populations and rates of segregation. The community needs index also includes the change in dissimilarity index over a span of 10 years, which can help identify displacement and anti-displacement effects occurring in places.

Poor Persons in High-Vacancy Tracts

Communities with high vacancy rates are those in which a large percentage of the housing units are unoccupied. This lack of occupancy can be due to a variety of factors, including economic conditions, the quality of the housing, and the availability of other housing options. When a community has a high vacancy rate, it can lead to negative consequences for the community. Vacancy rates have been tied to an increase in criminal activity (Branas, Rubin, and Guo, 2012). Vacant properties also spillover to decreased land value for surrounding buildings, and they decrease the tax base for cities because vacant properties generate little or no property tax revenue (Whitaker and Fitzpatrick, 2013).

Pre-1980 Vacant Housing

Past studies did not include a variable that captures old and vacant housing, which are likely to be houses in poor condition and likely needing to be replaced. For homes not needing to be replaced, if they are left vacant, they may not receive the necessary maintenance, leading to further deterioration. These homes also may be abandoned property that cities may claim, and federal funds are vital for cities to make use of vacant homes.

Change in Percent Poverty

A change in the poverty rate percentage can provide important information about trends in a community. If the poverty rate is decreasing, it may indicate that the community is experiencing economic growth and improvement. This growth could be due to several factors, such as the creation of new jobs, increased access to education and training, or the arrival of new businesses. Areas with decreasing poverty may be areas with demand from higher-income individuals where the market is already trending toward improvement. Meanwhile, areas with increasing poverty may be facing either economic downturn or plight. These communities may need additional support and resources to address the challenges.

Population Change

Places experiencing 10-year population loss may indicate new community development needs associated with a declining population. Population loss can be a sign of economic decline or lack of opportunities in the area. When people leave an area due to a lack of job prospects or other opportunities, it can create a need for resources and support in the community. Population loss can also be a sign of social or environmental issues, such as a lack of access to quality health care or education or an increase in crime. In these cases, the community may need additional resources and support to

address these issues and improve the quality of life for those who remain. In addition, population loss can lead to a decline in the tax base, which can make it difficult for the community to fund necessary services and infrastructure (Manville and Kuhlman, 2018). The values range from a population loss of 22.4 percent (East Cleveland, Ohio) to a population gain of 69.9 percent (Frisco, Texas) from 2010 to 2019.

This report also uses a 30-year population change variable to identify places with long-term population change. This variable is an extension of population loss, but it also captures intergenerational decline. Thirty years account for a generation that may have grown up in the place but left for better opportunities. Growth lag occurs due to a failing place economy and, therefore, represents unique community needs, including fiscal needs associated with a decreased tax base.

Broadband Access

Broadband access has become recognized as central to engagement with the economy. According to the Federal Communications Commission, 19 million Americans lack broadband access, affecting primarily non-White populations. Places lacking broadband access are likely to face unique economic challenges. Increasing broadband access is associated with significant economic benefits, along with health and equity outcomes (Marré, 2020; Tomer et al., 2020). Furthermore, due to broadband's high cost and importance, places that lack broadband access likely also lack other core infrastructure needs due to low fiscal ability.

Income Inequality

When income inequality is high, a large discrepancy exists between the income levels of the highest and lowest earners. This discrepancy can be a sign of several issues within the community, including a lack of economic opportunity and mobility, a lack of access to education and other resources, and a concentration of wealth and power among a small group of individuals. To measure income inequality, the Gini coefficient of CDBG jurisdictions is used. The Gini coefficient is a measure of income or wealth inequality within a population, ranging from 0 (perfect equality) to 1 (perfect inequality). North Las Vegas has the lowest Gini coefficient of 0.2082, and Miami has the highest Gini coefficient at 0.6063.

Median Household Income

Bunce, Neal, and Gardner (1983) included per-capita income in the creation of the needs index, but later studies have not included an income variable, presumably due to regional differences in price indices. Although the metropolitan-to-municipality variable helps to identify localities' needs that stem from having low-median incomes within a region, the variable does not capture that different regions have different levels of productivity. Areas with higher median household incomes have higher levels of productivity, and these localities can leverage this productivity to meet their communities' needs. Furthermore, the CDBG statute specifies funds to target low- and moderate-income individuals; the inclusion of median household income ensures that the community needs index captures the degree of need among moderate-income individuals because moderate-income populations in jurisdictions with low-median income ratios will have less wealth.

Employment-to-Population Ratio

Strong and sustainable urban communities stem from strong labor markets. The employment-to-population ratio is a measure of the percentage of a community's population that is employed. It is calculated by dividing the number of employed individuals in a community by the total population of the community. When a large percentage of a community's population is employed, it can contribute to the overall economic stability and prosperity of the community. On the other hand, a community with a low

employment-to-population ratio may struggle to sustain itself economically, which is because a smaller percentage of the population generates income, leading to a smaller tax base to support the community. A place with a low employment-to-population ratio will have a smaller tax base to service a larger population.

Unemployment Rate

Unemployment rate is a strong indicator of a struggling labor market and an economy short on demand. When unemployment is high, it can be a sign that the area lacks job opportunities and that many people struggle to find work, which can lead to financial strain and other challenges for individuals and families and a decline in the overall prosperity of the community. High unemployment can also be a sign of broader economic issues within the community, such as a lack of industry or a decline in the local economy.

Exclusion of Crime Data

Unlike past reports, this report excludes crime data from the needs index due to bad data quality. Recent analysis of the Uniform Crime Reporting data found several reasons why the data are not usable for the purpose of aggregating over CDBG jurisdictions. Kaplan (2023) identifies several issues with using aggregated crime data: (1) changing definitions of crimes across jurisdictions and time creates variability; (2) underreporting of crime is endogenous to agency funding and policy; (3) agencies may operate in multiple counties with no clear geographic bounds; (4) reporting crime is optional, and many agencies are lacking data. The data are poor enough that any imputation method will be inadequate (Maltz and Targonski, 2002).

The Needs Index

There are 1,231 entitlement and state CDBG geographies in fiscal year 2022. Puerto Rico and Hawaii were excluded from the needs index due to data constraints that resulted in inaccurate merges among the data. Paradise, California, and South Fulton, Georgia, were also excluded from analysis. Paradise experienced severe wildfires in 2019, which skews some of the input variables. Meanwhile, South Fulton became incorporated in 2017 from parts of Fulton County, and the data used take measures spanning from 2015 to 2019, so South Fulton data are incomplete. After these changes and other data cleaning, the analysis is left with 1,168 CDBG geographies.

Slightly more than 20 CDBG entitlement areas were missing labor data because the BLS does not publish statistics on areas with populations below 25,000. In these cases, the missing data were filled by imputing the number of employed and unemployed within these jurisdictions using the unemployment and employment to population rates of the remaining figures for the state in which the jurisdiction is located. A similar process was used to impute population change for a couple of CDBG jurisdictions that did not have 2010 population figures.

After all data were merged and cleaned, factor analysis distilled the 20 variables into three factors. This factor analysis is conducted with orthogonal rotations in line with Collinson (2014) to simplify analysis of factors by ensuring that the factors are uncorrelated with each other. The difference between no rotations and orthogonal rotations produces roughly similar results (Richardson, 2007). Factor analysis was chosen in this report over principal component analysis because principal component analysis ignores latent structures, although the idea behind the construction of this index is that some underlying structures compose “community need.”

Factor loadings represent the degree to which each observed variable is associated with each underlying factor. Specifically, factor loadings indicate the strength and direction of the relationship between each

observed variable, and each factor and can range from -1 to 1. Higher absolute values of factor loadings indicate a stronger relationship between the observed variable and the underlying factor. Interpreting factor loadings involves examining which observed variables have high loadings on which factors, and this examination can provide insight into the underlying structure of the data and help to identify patterns and relationships among the variables.

Exhibit 5 shows the factor analysis results through the first three factor loadings. This report's patterns of variance described by the factors are similar, although they slightly diverge from previous reports. Factor 1 is a single factor that captures much of the variances associated with the lack of wealth of a community, like Richardson's (2005) report. Although Richardson's factor 1 was also associated with decline, factor 2 strongly captures the variance described by communities in decline—those with population loss and aging housing stock. Finally, factor 3 captures variances associated with income inequality.

Exhibit 5. Factor Loadings

Loading Variables	Factor 1	Factor 2	Factor 3
Percent of persons in poverty, excluding college students	0.91	0.19	0.25
Percent of persons in labor force and unemployed	0.69	0.13	*NA*
Percent of population aged 16–64, employed	– 0.58	0.12	0.15
Percent of families with a single parent	0.81	0.27	*NA*
Percent of housing built pre-1980, vacant	0.67	0.4	0.36
Percent of housing built pre-1980, occupied by a poverty household	0.79	0.4	0.32
Ratio of jurisdiction's household median income to national household median income	– 0.75	– 0.17	0.19
Percent of households without internet access	0.82	0.27	*NA*
Percent of population age 18–24 with no high school diploma	0.7	*NA*	– 0.12
Percent of population 25+ with a college education	– 0.82	*NA*	0.56
Percent population change, 2010–2019	– 0.22	– 0.82	*NA*
Percent population change, 1990–2019	– 0.17	– 0.89	– 0.2
Gini coefficient	0.18	0.13	0.56
Percent of households overcrowded	0.14	*NA*	– 0.24
County dissimilarity index	*NA*	0.15	0.21
Percent of poor persons in census tracts with greater than 40-percent poverty	0.37	*NA*	0.14
Percent of poor persons in census tracts with high vacancy	0.26	0.14	0.19
Percent change in poverty, 2010–2019	*NA*	0.3	0.17
Percent change in dissimilarity index, 2010–2019	– 0.11	*NA*	*NA*

Loading Variables	Factor 1	Factor 2	Factor 3
Per-capita income/per-capita income of metropolitan statistical area	– 0.43	– 0.27	0.13

NA = less than 0.1 correlation with the factor

Factor scores provide estimates of the scores that each observation has on the factors based on their characteristics. Scores are calculated for each jurisdiction along the three factors representing their relative strength of association, with each identified factor compared with other jurisdictions. To construct the scores, this report uses the regression method from Thurstone (1935). This method maximizes the degree to which the jurisdiction's factor scores are correlated to the factors (DiStefano, Zhu, and Mîndrilã, 2009).

Factor 1 does an excellent job of representing community need. Among all variables used in the factor analysis, factor 1 describes 36 percent of the variance. One-half of the variables correlate with factor 1 at 50 percent or greater, with poverty having the highest correlation at 0.91. This factor appears to be most representative of the economic distress associated with lack of capital. Exhibit 5 shows the factor loadings for factor 1, with each variable playing the anticipated (positive or negative) role.

Among CDBG cities with populations greater than 200,000, exhibit 6 shows the five with high and low need according to factor 1. Detroit tops the list, with Cleveland right behind. With less than 200,000 people, Benton Harbor and Flint are also among the neediest according to factor 1. Fremont is the least needy according to factor 1, with San Francisco also appearing among the least needy. Palo Alto and Cupertino, with populations less than 200,000, are also among the lowest scoring.

Exhibit 6. Factor 1 High and Low Scorers Among Community Development Block Grant Cities (> 200,000 Population)

Highest Scoring			Lowest Scoring	
Place	**Score**		**Place**	**Score**
Detroit, Michigan	3.17		Fremont, California	– 1.84
Cleveland, Ohio	2.59		Huntington Town, New York	– 1.65
Newark, New Jersey	2.04		San Francisco, California	– 1.62
Rochester, New York	1.95		Scottsdale, Arizona	– 1.46
Buffalo, New York	1.86		Plano, Texas	– 1.38

Factor 2 is heavily associated with rates of population change, which captures a dimension of community distress associated with economic migration. Population changes spanning 10 and 30 years are the only two variables with greater than 50-percent correlation with factor 2, with vacancy rates at the third highest correlation. Factor 2 then captures areas going through economic decline with aging housing stock and decreasing populations.

Exhibit 7 shows high- and low-scoring CDBG cities for factor 2, with populations greater than 200,000. Not shown, this factor picks up high-need midwestern cities with populations less than 200,000, such as Florissant, Missouri, and Flint, Michigan. Meanwhile, Texas and Arizona counties are among the lowest scoring on this factor because they experience population growth. Although counties are not displayed

on the list, Chandler, Arizona, with large population growth, does make an appearance. Port St. Lucie is the lowest scoring CDBG city with a population greater than 200,000.

Exhibit 7. Factor 2 High and Low Scorers Among Community Development Block Grant Cities (> 200,000 Population)

Highest Scoring			Lowest Scoring	
Place	**Score**		**Place**	**Score**
Santa Ana, California	1.00		Port St. Lucie, Florida	– 2.96
Norfolk, Virginia	0.99		Irvine, California	– 2.90
Baltimore, Maryland	0.94		Chandler, Arizona	– 1.93
Babylon Town, New York	0.92		Orlando, Florida	– 1.47
Detroit, Michigan	0.90		Las Vegas, Nevada	– 1.44

Factor 3 is the hardest to interpret but appears associated with concentration of poverty; it is most strongly correlated with the Gini coefficient, representing income inequality and the percentage of the population with a college degree. Although increased college education generally should indicate less community need—resulting in a negative correlation—this factor may have a high positive correlation because college education may be associated with communities of higher income segregation. This factor also captures some degree of aging housing stock, with 0.36 and 0.32 weights on pre-1980 housing occupied by households in poverty and vacant housing, respectively.

Exhibit 8 shows the highest and lowest scoring jurisdictions for factor 3 among cities with populations greater than 200,000. The District of Columbia tops the list, with New Orleans, Detroit, Seattle, and Atlanta following. Hoboken, New Jersey, and Palo Alto, California, are also high scoring on factor 3, despite being very low need according to factor 1. California cities comprise four of the lowest scoring jurisdictions according to this factor: Fontana, Moreno Valley, Santa Ana, and Oxnard. Demographically, all four cities have low college education rates and have diverse populations, with a significant proportion of residents who identify as Hispanic or Latino. These cities have community development need, but largely due to low college education rates, they score low among factor 3.

Exhibit 8. Factor 3 High and Low Scorers Among Community Development Block Grant Cities (> 200,000 Population)

Highest Scoring			Lowest Scoring	
Place	**Score**		**Place**	**Score**
District of Columbia	2.79		Fontana, California	– 1.93
New Orleans, Louisiana	2.48		Moreno Valley, California	– 1.93
Detroit, Michigan	2.45		Santa Ana, California	– 1.83
Seattle, Washington	2.36		Garland, Texas	– 1.51
Atlanta, Georgia	2.29		Oxnard, California	– 1.40

To combine the factors and construct an aggregate index for each jurisdiction, each factor is assigned a weight. Factor 1, being the most encompassing of all variables and containing a heavy correlation with poverty, is weighted the heaviest at 70 percent. Factor 2 is weighted at 20 percent because it represents distress from aging housing stock and economic decline. Finally, Factor 3 is weighted at 10 percent. To calculate the overall score for a jurisdiction, the scores for each factor are added together, with each score being multiplied by its assigned weight. Exhibit 9 lists the top 10 neediest cities with populations greater than 200,000, along with the least needy cities.

Exhibit 9. Most and Least Needy Community Development Block Grant Cities (> 200,000 Population)

Most Needy (Most First)	Least Needy (Least First)
Detroit, Michigan	Fremont, California
Cleveland, Ohio	Plano, Texas
Rochester, New York	Irvine, California
Buffalo, New York	Scottsdale, Arizona
Newark, New Jersey	Huntington Town, New York
Toledo, Ohio	San Francisco, California
Birmingham, Alabama	Chandler, Arizona
Hialeah, Florida	Seattle, Washington
Memphis, Tennessee	Santa Clarita, California
Philadelphia, Pennsylvania	San Jose, California

The variables in the needs index include residents on American Indian and Alaska Native (AIAN) land in the counts despite the CDBG formula excluding them from the computation of jurisdictions allocation. AIAN reservation geographies do not align perfectly with 070 summary-level data or place-county-state-level data, which makes excluding those territories difficult. Therefore, to preserve the reliability of the index, AIAN reservation numbers have remained, which primarily affects nonentitlement areas with large populations of AIAN, such as Arizona and Oklahoma. AIAN counts are not subtracted from central city estimates and, therefore, do not affect entitlement cities.

Chapter 4. Community Development Block Grant Targeting to Need

To test the effectiveness of the Community Development Block Grant (CDBG) formula, the needs index can be compared against allocation per capita in 2019 for all CDBG geographies in the analysis. As a followup to past reports, this report describes targeting to need on a per-capita basis under the assumption that population is not a measure of need. Targeting should mean that areas with high need receive a larger per-capita grant than areas with relatively lower need.

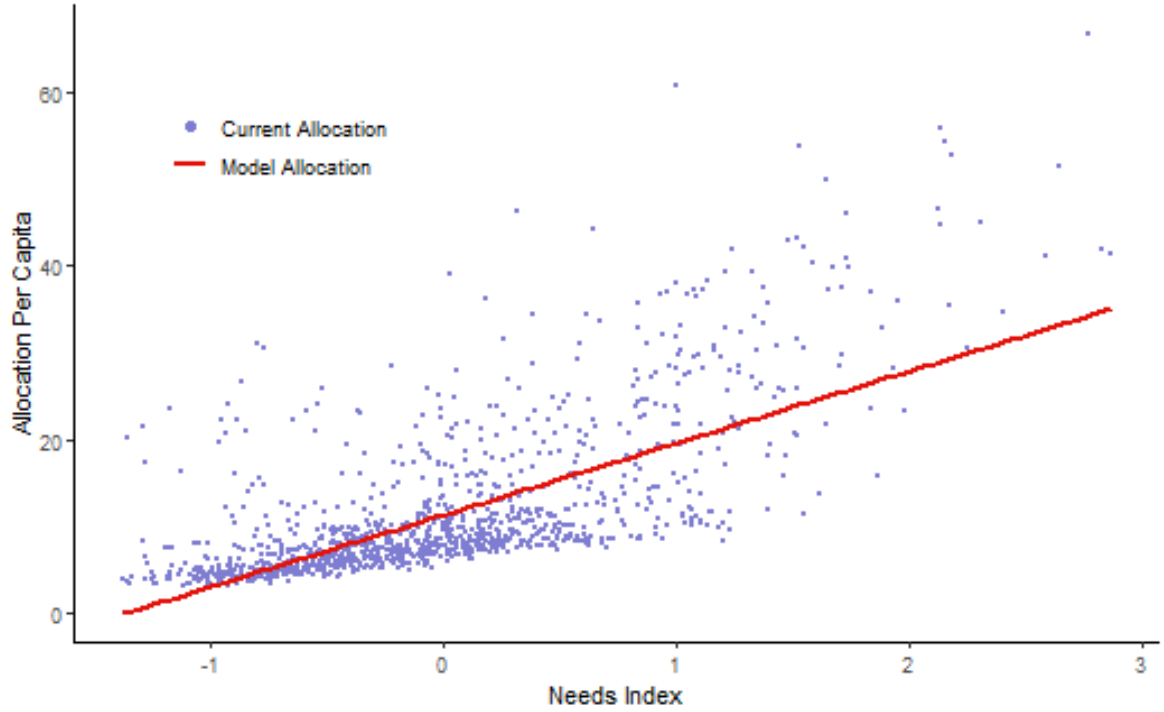
Because excluding American Indian and Alaska Native (AIAN) counts from the figures included in the needs index was unrealistic, the allocations were computed with AIAN counts in the data used to compute the allocations. The CDBG formula was then run across all jurisdictions that were included in the needs index.

Collinson (2014) presents a framework, based on prior studies, for analyzing the effectiveness of a formula for distributing funds according to need. The framework focuses on two key principles of fairness: horizontal equity and vertical equity. Horizontal equity refers to the idea that grantees with comparable levels of need should receive similar grant amounts per capita. In other words, grantees with similar needs should be treated equally. The R-squared value in a regression equation of allocation per capita against the needs index captures the degree of horizontal equity, with a higher R-squared value indicating a greater degree of horizontal equity.

Vertical equity refers to the idea that grantees with higher levels of need should receive more funding per capita than grantees with lower levels of need. In other words, grantees with greater need should be treated more favorably. The beta-coefficient in the regression equation of allocation per capita against the needs index captures the degree of vertical equity, with a higher beta-coefficient indicating a greater degree of vertical allocation. However, a larger vertical allocation may not be fair because, at some point, allocations begin to over-allocate to high-need areas. Vertical equity refers to the correct balance between funding high-need areas more than low-need areas without overfunding high-need areas. A formula that exhibits high levels of both horizontal and vertical equity is effective at targeting need and distributing resources fairly.

Exhibit 10 charts the distribution of allocation per capita under the current formula on the needs index. As shown, the allocations vary widely, even among grantees of similar need. As needs increase, the variability in allocations also appears to increase. Visually, it appears that some degree of vertical equity exists, although the poor horizontal equity offsets it.

Exhibit 10. Current Formula's Performance on the Needs Index



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and needs index

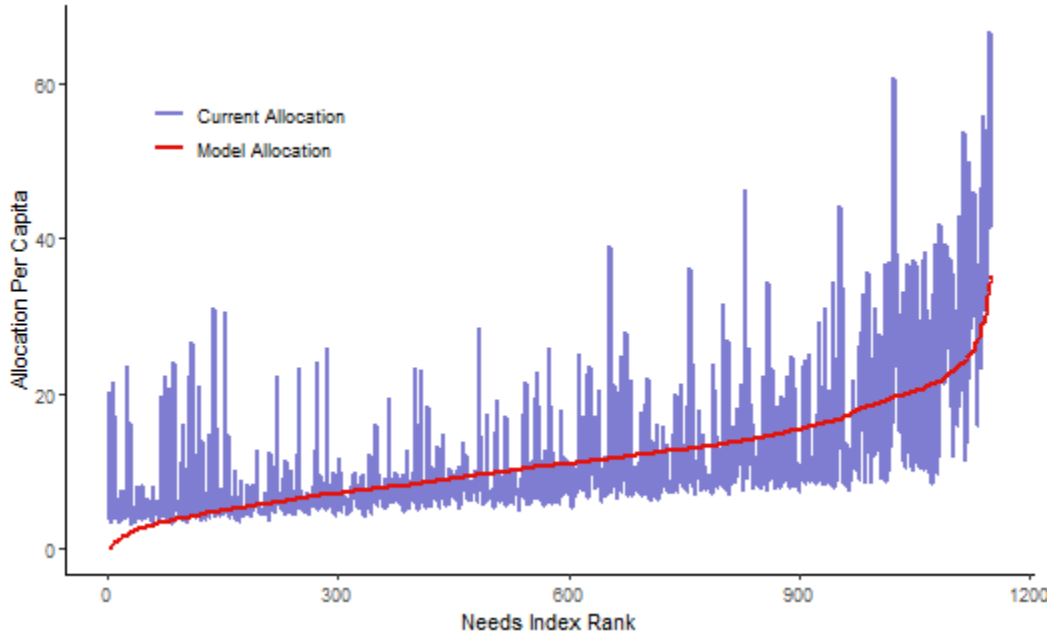
This report constructs an allocation of perfect horizontal equity, referred to as the model allocation. To do so, the needs index was made positive for each jurisdiction and then allocated according to the share of need represented by each jurisdiction. To make each jurisdiction positive, the absolute value of the jurisdiction with the least need was added to each jurisdiction. Then, each jurisdiction's needs index is multiplied by population to produce a nominal need value, and the CDBG funds are allocated based on each jurisdiction's share of nominal need. A regression of allocation per capita from the model needs formula on the needs index is performed with a perfect R-squared value.

This method relies on the assumption that the jurisdiction with the least need has no need. From a policy perspective, no city should have zero need, let alone less than zero need. Therefore, the slope represented by the regression of the model allocation is the upper bound of an allocation with fair vertical equity. Any greater slope would imply that higher-need jurisdictions receive more, which could only be possible if lower-need jurisdictions receive a negative allocation. Nonetheless, the extent of a community's progress and advancement, conceived as a theoretical construct, remains inherently tied to the available resources encompassing capital, technological capabilities, and the collective human effort present within the contemporary time. In this context, the community exhibiting the least urgent requirements can be perceived as the benchmark—a community devoid of substantial necessities when gauged against the trajectory of societal advancement. Essentially, at any given juncture, the community with the minimal demands can be regarded as the optimal representation of what society can achieve within the confines of its prevailing limitations, hence providing justification of assigning the least needy jurisdiction zero "need" according to the index. Using this method, the ideal slope demonstrating vertical equity should lie close to the model allocation slope. The slope of the hypothetical model allocation line is 8.27.

Past papers have also provided another method of visualizing the formula's ability to allocate to the needs index through ranking communities by their need. The least needy community is ranked 1, the

next is ranked 2, and so on. Exhibit 11 plots allocation per capita against the ranking of an area's needs index. The solid line represents the model allocation, which is the dollar amount a place would receive on a per-capita basis if the funds were allocated according to the needs index. It is the same model allocation seen in exhibit 10 but transformed based on rank. Through an x-axis based on ranking, this visualization helps illustrate that very high-need communities have exponentially greater needs and, therefore, receive exponentially greater funds. Meanwhile, the bouncing line represents the high degree of variability in the current formula's allocation. On the left side, very low-need places, such as Newton, Massachusetts, and Haverford, Pennsylvania, receive very high per-capita grants. On the right side, very high-need places receive more than their model allocation, although many needy places receive very low per-capita grants.

Exhibit 11. Current Formula's Performance on Needs Index Rank



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and needs index

Exhibit 12 displays the results of regressing the full allocation under both formulas on the needs index. The R-squared values of 0.4873 (unweighted) and 0.4088 (weighted) indicate that grantees of similar need may be receiving significantly different allocations. Meanwhile, the slopes of 8.7298 and 7.8572, respectively, tell two varying stories on the formula's performance concerning vertical equity. The difference between the unweighted and weighted slopes stems from the poor horizontal equity because places with high populations can have significant differences between their current allocation per capita to the model allocation, which would skew the calculation of slopes. For these reasons, the unweighted slope may be more informative here. The current formula seems to overallocate to need in comparison to the model allocation. Exhibit 11 confirms this, showing that allocations among some high-need communities are far greater than the model allocation.

Exhibit 12. Dual Formula—Regression of Allocation per Capita on Needs

	Unweighted	Weighted
Coefficient	8.7298	7.8572
R-squared	0.4873	0.4088

To understand the distribution of funding across the needs index, exhibit 13 shows the allocation per capita by level of need through splitting jurisdictions into deciles of need. According to the model allocation, the lowest need jurisdictions are overfunded, with the model allocation allocating less than one-half of the current allocation to the lowest need jurisdictions. The fourth through ninth deciles are all allocated more under the model allocation, and the highest need jurisdictions are allocated 14 percent less, indicating that under the current formula, low-need places are receiving significantly greater allocations than they should, whereas very high-need places receive slightly more than they should.

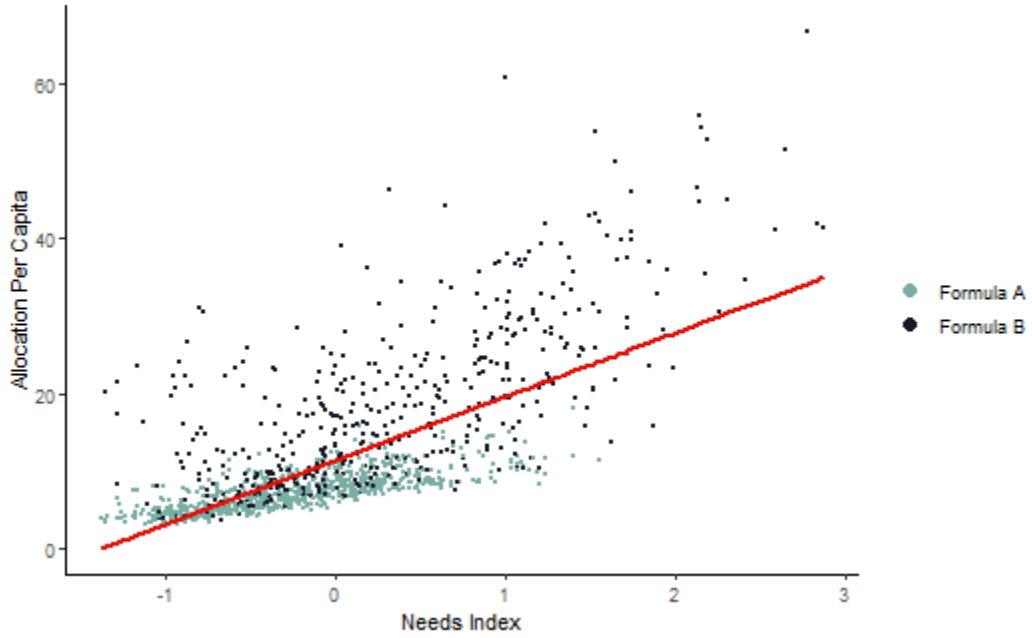
Exhibit 13. Allocation Difference Between Model and Current Allocation by Decile of Need

Decile of Community Development Need	Allocation per Capita	Model Allocation	Percent (%) Difference
Low	$6.57	$2.78	– 58
2	$6.95	$5.18	– 25
3	$7.51	$6.93	– 8
4	$8.33	$8.42	1
5	$8.87	$10.07	14
6	$11.14	$11.54	4
7	$11.45	$13.10	14
8	$13.01	$15.05	16
9	$17.52	$18.53	6
High	$28.66	$24.64	– 14

Formula B Overallocation

Formula B grantees receive significantly more allocation per capita than formula A grantees. As exhibit 14 shows, formula B grantees are far more likely to receive higher allocations per capita than their needs indicate. On average, formula B grantees receive $4.56 more per capita than their model allocation. Meanwhile, formula A grantees receive $2.20 less per capita than their model allocation. High-need grantees are more likely to be formula B grantees such that all grantees past roughly 1.5 on the needs index are formula B grantees. Exhibit 14 also helps explain the overall targeting. Formula B grants appear to have a good degree of vertical equity but are very scattered, bringing down the overall horizontal equity of the CDBG formula. Meanwhile, formula A grantees appear to have little variability but also appear to have a low degree of vertical equity.

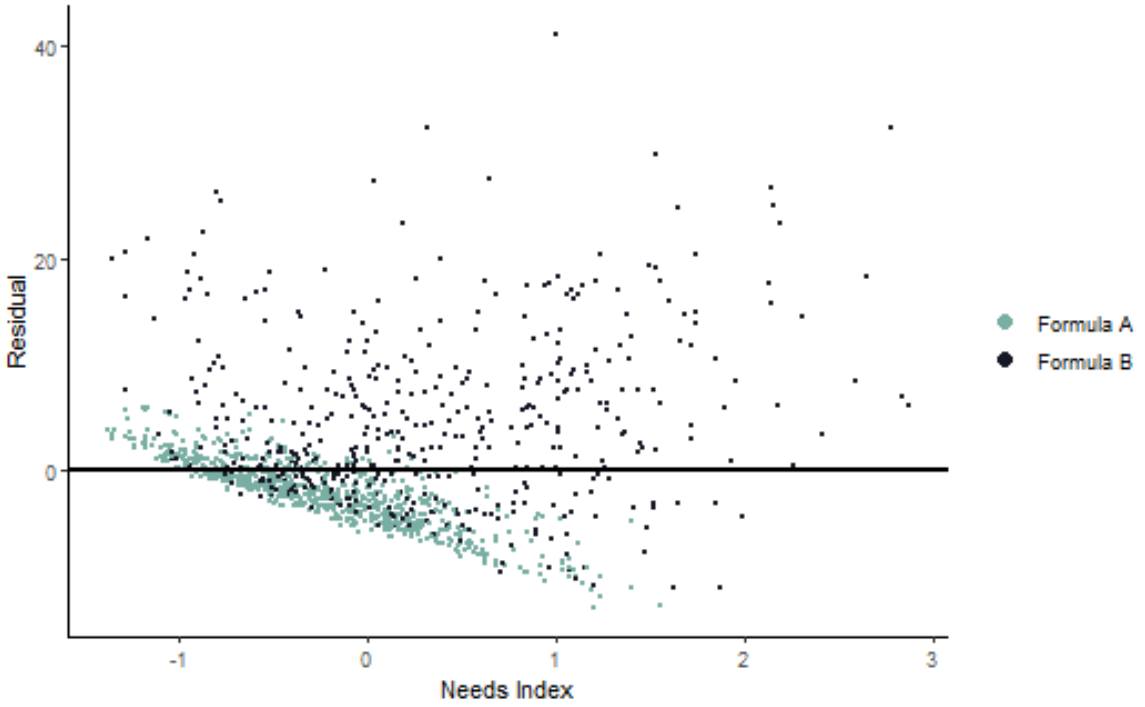
Exhibit 14. Current Formula's Performance on the Needs Index by Formula



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and needs index

Exhibit 15 shows the residual of the jurisdiction's actual allocation per capita from the model allocation. The residual can be interpreted as the per-capita over or under allocation of the jurisdiction. Formula B grantees are more likely to have greater needs, but simultaneously, as need increases for formula B grantees, so too does the overtargeting of the formula to those grantees. At approximately two and greater on the needs index, no formula B grantees are undertargeted. Meanwhile, as need increases for formula A grantees, so too does the undertargeting. Formula A grantees form a distinct downward slope that suggests "flatness" (as in exhibit 14) in the allocation such that higher-need formula A grantees do not receive adequately more allocation per capita than low-need formula A grantees.

Exhibit 15. Residual From Model Allocation on the Needs Index by Formula



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and needs index

Formula A Analysis

Formula A allocates to many low-need jurisdictions, according to the need index. The least needy 10 percent of jurisdictions rely heavily on formula A, with 75 percent being allocated under formula A.

To analyze the targeting of formula A, the needs index for formula A grantees is compared with their allocation per capita. Exhibit 16 shows formula A's ability to match to need through regressing formula A grantees allocations per capita on their needs index. As shown, formula A has significant issues targeting to need both in terms of vertical and horizontal equity, with unweighted and weighted coefficients of 3.29252 and 3.28143 and unweighted and weighted R-squared values of 0.5582 and 0.5609, respectively. The slopes are much smaller than the model allocation's slope of 8.24, indicating that formula A does a poor job of allocating more funds to needier grantees. The inclusion of the population factor may be the cause, which creates an inequity where high-need formula A grantees do not get substantially more funding than low-need formula A grantees. Population's inclusion may also be contributing to the modest R-squared values for which similarly needy jurisdictions are not receiving very different allocations. For instance, a formula allocating only to population would have a perfect R-squared value but a slope of zero.

Exhibit 16. Formula A Grantees—Regression of Allocation per Capita on Needs

	Unweighted	Weighted
Coefficient	3.29252	3.28143
R-squared	0.5582	0.5609

Formula A does not operate independently, and its poor targeting may be caused by formula B. On vertical equity, formula B consumes a greater share of the allocation than its needs suggest, which may prevent formula A from allocating money to more needy grantees.

Formula B Analysis

Formula B allocates to many high-need jurisdictions according to the needs index. The neediest 10 percent of jurisdictions rely heavily on formula B, with 86 percent being allocated under formula B. Exhibit 17 shows formula B's ability to match to need through regressing formula B grantees allocations per capita on their needs index. Formula B has slightly worse horizontal equity than formula A, with R-squared values around 0.5. However, formula B has very large beta-coefficients that are significantly greater than the upper bound of the slope given by the model allocation, with slopes of 9.1735 and 10.9414. The pre-1940 and growth lag variables may cause the large slopes, which are less distributed across all places and more unique to a minority of CDBG places. This discrepancy results in large slopes with high-need formula B jurisdictions receiving significantly more than low-need formula B jurisdictions.

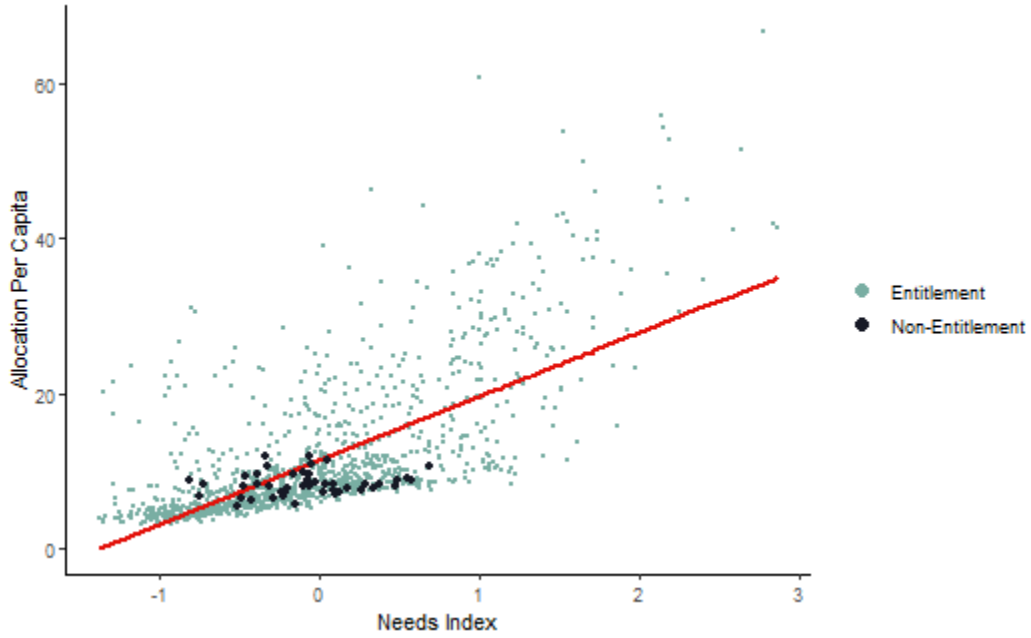
Exhibit 17. Formula B Grantees—Regression of Allocation per Capita on Needs

	Unweighted	Weighted
Coefficient	9.1735	10.9414
R-squared	0.4832	0.5039

Nonentitlement Areas

This report is the first to construct a needs index that captures entitlement and nonentitlement areas simultaneously. By capturing both, this report can analyze the current 70–30 split of funds through analyzing the different shares of need for nonentitlement and entitlement areas. Exhibit 18 shows that most states receive less allocation per capita than their model allocation based upon the sums of their nonentitlement areas. According to the needs index, nonentitlement areas contain 35 percent of need nationwide, yet states receive 30 percent of the total allocation. To calculate the total need contained in nonentitlement areas, the sum of nonentitlement areas nominal needs—the needs index multiplied by the area's population—was divided by the sum of all nominal needs.

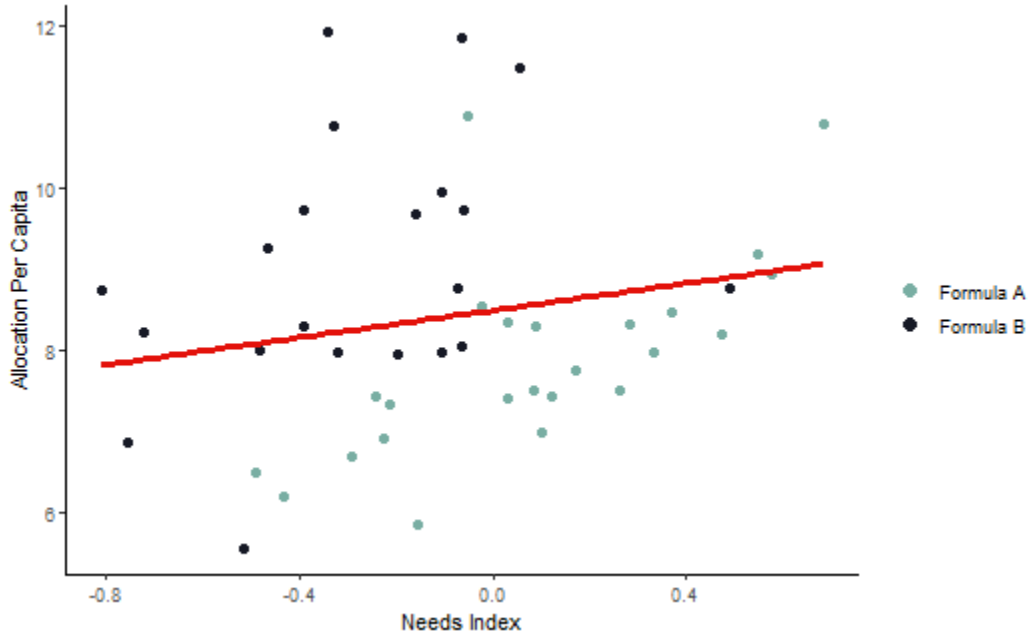
Exhibit 18. Current Formula's Allocation on the Needs Index by Entitlement Status



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and needs index

Among nonentitlement areas, targeting is extremely low. Although formula B grantees on average receive more than formula A grantees among nonentitlement areas, no clear correlation exists between allocation and needs. A large part of this poor targeting to need can stem from the inclusion of the population variable in both formula A and B grantees for nonentitlement areas. Exhibit 19 shows no clear correlation between allocation and needs for nonentitlement areas.

Exhibit 19. Allocations Among Nonentitlement Areas by Formula



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and the needs index

Exhibit 20 confirms the poor targeting with insignificant slopes of 0.8108 and 0.4754 and practically zero correlation with R-squared values of 0.03901 and 0.01649. Funds to states are distributed almost randomly. Distribution among states displays poor vertical and horizontal equity.

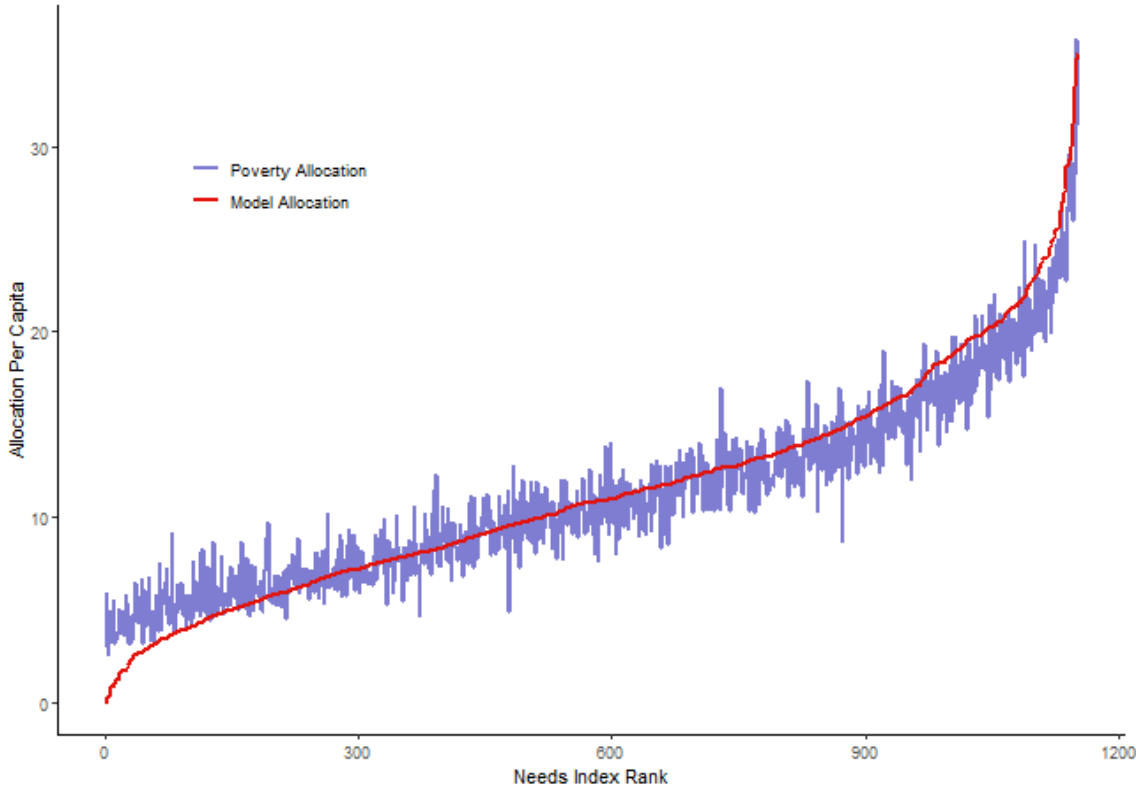
Exhibit 20. Regression of Allocation per Capita on Needs for Nonentitlement Areas

	Unweighted	Weighted
Coefficient	0.8108	0.4754
R-squared	0.03901	0.01649

Poverty Baseline

To provide a scale of reference, this report tests the ability of a formula that distributes only according to poverty against the needs index. A formula allocating to poverty performs significantly better at allocating to community need than the current formula, as exhibit 21 shows. This result is expected due to the 70 percent placed on the poverty-related factor 1. The poverty allocation demonstrates good horizontal equity, with an R-squared value of 0.9275, and demonstrates decent vertical equity with a slope of 6.95. The slope may be a bit low because a poverty variable will underestimate the need of some high-need communities that not only have high poverty rates but also face aging housing stock. As shown, high-need communities' allocations fall under the model allocation under a poverty-only allocation. This analysis confirms that a formula built solely on poverty would perform significantly better in horizontal equity than the current formula.

Exhibit 21. Poverty-Based Formula Performance on the Needs Index



Source: Office of Policy Development and Research calculation of Community Development Block Grant formula allocations and the needs index

Even without thinking about the construction of the community needs index (the interpretation and weighting of factors), the factor analysis performed can be used to identify variables most explanatory of the statutory objectives of CDBG. The variables inputted into factor analysis are all assumed to be targets of the CDBG formula to some degree. The first factor explains the greatest degree of variation among the other variables, and poverty has a 0.91 correlation with the first factor. This indication from the factor analysis confirms that poverty explains a significant amount of variation among the other factors. Indeed, when looking at the amount of variation that each variable may be able to independently explain in the data, poverty tops the list. Poverty explains 33 percent of the variation among the variables in factor analysis, meaning it is the variable most associated with all other variables related to community need.

Chapter 5. Analysis of Formula Factors

Chapter 4 applied the needs index to illustrate the flaws in the current formula's ability to target need. Chapter 5 expands on this analysis by diagnosing the problems identified in chapter 4 and demonstrating the flaws in the formula without relying on the community needs index. This report separates the two analyses to emphasize the evidence of significant flaws in the current formula without using a data-heavy index.

The current formula has several main problems that affect its ability to fairly target funding to community need. First, the 70–30 split between nonentitlement and entitlement areas causes nonentitlement areas to be underfunded. Next, five of the problems stem from issues with the definition or application of four of the five factors in the Community Development Block Grant (CDBG) formula: poverty, population, pre-1940 housing, and growth lag. Finally, the way the factors are computed in the dual-formula system creates an issue that causes some factors to be overweighted and some to be underweighted, particularly an underweighting of poverty. This chapter outlines these flaws and implications for future formula fixes.

The 70–30 Split

Entitlement and nonentitlement areas are allocated by separate pots of funding. States receive 30 percent of the annual CDBG appropriations to allocate to nonentitlement areas within their state, whereas entitlement areas are allocated 70 percent of the total allocation. Congress constructed the initial split to represent the proportionate populations between the two jurisdictions. However, even by 1982, the distribution of the population had changed significantly, with entitlement communities composing 55 percent of the population and nonentitlement communities composing 45 percent (Richardson, 2005).

Over time, the application of the 70–30 split between entitlement and nonentitlement areas results in nonentitlement areas receiving increasingly more funding on a per-capita basis because, as urban populations grow, more nonentitlement areas receive entitlement status, and therefore, the 30 percent of funding is spread across fewer nonentitlement areas. However, at present, nonentitlement communities account for more than 30 percent of the U.S. population, so they still receive less funding per capita than entitlement communities. This report finds that the share of the U.S. population living in entitlement areas has increased since 1990, but entitlement communities still represent less than 70 percent of the population (64.9 percent as of 2020). In fiscal year 2022, nonentitlement areas received $8.84 per capita, whereas entitlement communities received $10.38 per capita. Exhibit 22 shows the breakdown between entitlement and nonentitlement areas of the share of the population and the people in poverty by decade since 1990.[12] As shown, entitlement communities have accounted for a consistently increasing share of both the overall population and of the population in poverty.[13]

[12] This analysis uses only the 50,000 and 200,000 population criteria for entitlement cities and counties, respectively. For the purposes of demonstration, it removes grandfathered communities and principal cities that would not be eligible based on population.

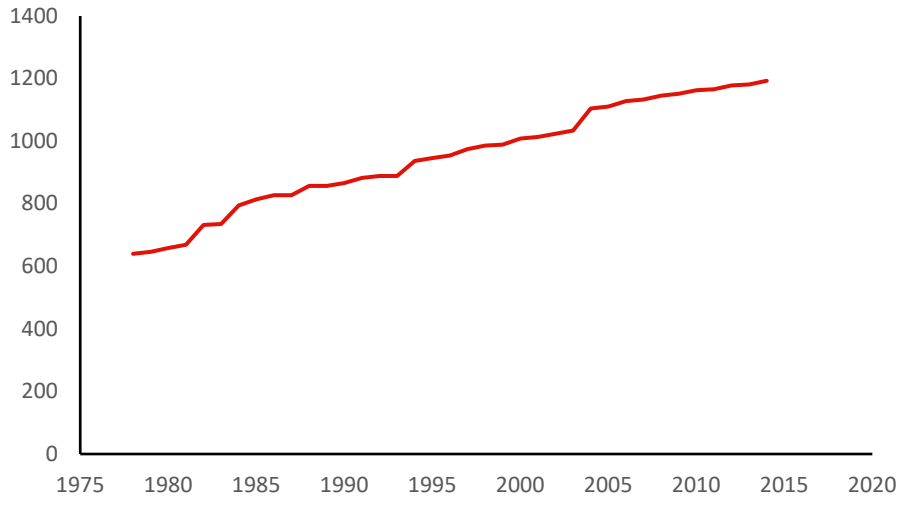
[13] Poverty figures for 2010 were based on 2008–2012 American Community Survey (ACS) 5-year data, and poverty figures for 2020 were based on 2015–2019 ACS 5-year data.

Exhibit 22. Entitlement and Nonentitlement Share of Population and Poverty by Decade

Year	Share of Total Population		Share of Population in Poverty	
	Entitlement	Nonentitlement	Entitlement	Nonentitlement
1990	0.594	0.406	0.546	0.452
2000	0.614	0.386	0.610	0.390
2010	0.629	0.371	0.636	0.364
2020	0.649	0.351	0.648	0.352

Two factors cause the trend of increasing population in entitlement communities: increasing populations within current entitlement communities through increasing density and increased geographic area through annexation, as well as an increasing number of entitlement grantees. Exhibit 23 shows the increase in the number of entitlement grantees over time. In 1978, 640 entitlement communities existed, compared with 1,193 entitlement communities in 2014. With each addition of an entitlement area, nonentitlement areas represent fewer people. When nonentitlement areas gain population, they become closer to becoming entitlement areas, which happens when places surpass the metropolitan statistical area (MSA) threshold—that is, when cities surpass populations of 50,000 or counties (excluding metropolitan cities) surpass populations of 200,000. Therefore, this trend is expected to continue as long as the population experiences net positive growth.

Exhibit 23. Entitlement Areas by Year (Fiscal Years 1978–2014)



Source: Office of Policy Development and Research calculations of HUD administrative data

Conversations have transpired about redefining MSA thresholds. The Office of Management and Budget previously considered changes to the definitions of metropolitan and micropolitan statistical areas in a 2021 request for comment. The proposal recommended an increase of the MSA threshold from 50,000 to 100,000.[14] This change, if applied to the CDBG formula and no legacy qualification clause existed (current law allows entitlement to remain entitlements even if they no longer meet the population or

[14] OMB-2021-0001-0001.

principal city requirements), would decrease the number of entitlement communities because some areas would switch from entitlement to nonentitlement status.

Theoretically, a change in a city's designation from an entitlement area to a nonentitlement area should increase the state's nonentitlement funding by almost exactly the city's theoretical appropriation under entitlement funding, because the community needs contained within that city's geography has not changed, only its designation. However, nonentitlement and entitlement areas compose different shares of need of the factor variables than would be implied by the 70–30 split. For a place to receive the same allocation according to the poverty factor under entitlement or nonentitlement status, the following must be true:

$$\frac{POV_i}{POV_{ent}} * 0.7 = \frac{POV_i}{POV_{nent}} * 0.3$$

$$0.7 * POV_{nent} = 0.3 * POV_{ent}$$

$$0.7 * POV_{nent} = 0.3 * (POV_{nat} - POV_{nent})$$

$$POV_{nent} = 0.3 * POV_{nat}$$

That is, nonentitlement areas must contain 30 percent of the share of poverty. Similarly, entitlement areas must contain 70 percent of the share of poverty. The same can be said about the rest of the factors. According to fiscal year 2022 CDBG calculations, entitlement areas compose less than a 70 percent share of need of population, poverty, and pre-1940 housing allocation, but more of overcrowding, as exhibit 24 shows. Because entitlement areas on average contain less share of need than their 70-percent allocation, they are overfunded compared with nonentitlement areas.

Exhibit 24. Entitlement Share of Need Among Formula Factors

Variable	Entitlement Share of Need
Population	0.665
Poverty	0.676
Pre-1940 Housing	0.647
Overcrowded	0.782

The share of need for population and poverty in this table is greater than the share of need represented in exhibit 24 because exhibit 22 does not include jurisdictions that qualify as entitlement areas through being a principal city or through previous, or "legacy," qualification. In fiscal year 2022, 260 cities with less than 50,000 individuals received allocations under entitlement status. Of those, 116 were designated due to being principal cities of MSAs, and 144 of the cities were allocated under the entitlement formula due to previously being eligible for assistance. These 144 legacy cities could have either previously been a principal city or previously contained a population greater than 50,000. For instance, Dunkirk, New York, received entitlement status with a population of only 12,743. The city never contained a population greater than 50,000, but in 1989, the Census Bureau created a new MSA for the region Jamestown-Dunkirk area while labeling Dunkirk as a principal city containing a population of less than 14,000. In 2003, the MSA designation was changed to a micropolitan statistical area.

A formula that appropriately targets need should not require an entitlement or nonentitlement directive. Rather, the formula can be run across all areas, and the split of funds between both types of areas will be accurately representative of both areas' needs. Future legislation should consider getting rid of the 70–30 split.

College Town Overallocation

The formula's poverty variable includes counts of off-campus, full-time college students who may inflate poverty statistics for a community. The income data that the census collects for these students typically does not include supplemental income from their parents, which leads to overallocation of funds to communities with a large portion of off-campus college students. On-campus college students have not been included in census poverty statistics and, therefore, do not affect this analysis.

Poverty among full-time college students is not likely to be an indicator of community need. First, the traditional wisdom of past reports on CDBG is that college students are more likely to have secondary income support that is not accounted for in poverty calculations (Richardson, 2005). College also acts as an investment, so although college students may be identified as in poverty, their needs are less than other populations in poverty because college-educated people have an increased likelihood of finding financial stability post-graduation due to better job prospects. Due to their future earnings, college students will spend a greater amount in present times to smooth consumption over their lifetime earnings (Modigliani, 1966). College students may also not be a good indicator of community need because they are more transient than the broader city population and are less likely to remain in their current jurisdiction upon graduation. Meanwhile, colleges and college students typically produce positive economic benefits for the surrounding city that can help with the city's community development and resilience in the face of economic slumps (Davis, 2016; Valero and Van Reenen, 2019), indicating that not only is college student poverty not likely to be associated with community need, but the current inclusion of off-campus college students in the formula's poverty variable may be allocating funds in the opposite direction as community need.

Analysis of the 2012–2016 American Community Survey data finds that 211 counties had statistically significant decreases in poverty rate when off-campus college students were excluded, whereas zero counties saw an increase (Benson and Bishaw, 2018). Exhibit 25 replicates Benson and Bishaw's analysis with 2015–2019 census data and shows the entitlement cities with the greatest difference in poverty rates as calculated with and without college students. Due to data constraints, the column indicating the percentage of college students was populated using figures from Benson and Bishaw. Each of the cities with the top 10 greatest differences in poverty rates under the two different calculations are formula A grantees—except for Ithaca, which has a relatively large pre-1940 housing stock—because they benefit from the 50-percent weight on the poverty factor in formula A. The data used for this report did not have a way to isolate only full-time college students; instead, in calculating poverty without college students, this report excludes all individuals enrolled in college regardless of full-time or part-time enrollment.

Exhibit 25. Entitlement Cities With Greatest Poverty Differences When Excluding Off-Campus College Students

Place	Population	Percent (%) College Students	Percent (%) Poverty	Percent (%) Poverty (No College)	Difference	Reduction ($), Excluding College Students
Blacksburg, Virginia	44,303	43.9	34.5	4.4	30.1	335,054
State College, Pennsylvania	42,275	48.0	32.0	3.4	28.6	303,634
East Lansing, Michigan	48,729	44.4	27.3	3.6	23.7	289,810
Ithaca, New York	30,569	43.1	29.4	6.3	23.2	177,958
West Lafayette, Indiana	48,551	41.5	26.6	3.7	23.0	280,258
College Station, Texas	113,686	30.8	26.5	4.6	21.9	626,749
Bloomington, Indiana	84,116	29.1	28.9	7.5	21.5	453,692
Bowling Green, Ohio	31,526	27.6	26.7	5.7	21.0	166,521
Radford, Virginia	17,691	29.4	30.2	9.2	21.0	93,377

For example, the State College borough in Pennsylvania is the home to Penn State University and is an entitlement city under the CDBG program. In 2019, the city had a population of 42,275, with 32 percent in poverty. According to the 2016 census figures, 48 percent of the population is composed of college students. The poverty rate decreases by 28.6 percentage points when excluding off-campus college students. State College was allocated $604,000 in fiscal year 2021, $369,000 of which came from the poverty weight. If off-campus college students were excluded from analysis, State College would have been awarded only roughly $63,000 according to its poverty factor, resulting in $203,000 in less funding. The last column of exhibit 25 shows the dollar reduction that would result from excluding college students.

There may be reasons to continue to include off-campus college students in the poverty rate used for the formula calculation. Many college students—perhaps more than an average commentator would estimate—are nontraditional. They are parents, caregivers, full-time employees, and retirees, and many may be part-time students (CLASP, 2015). The share of dependent college students from poor families has been climbing in recent decades, from 12 percent in 1996 to 20 percent in 2016 (Pew 2019). In this report, college students are not factored into poverty figures for the establishment of the community needs index. Exhibit 25 bolsters this decision, which shows that large colleges with primarily traditional students who likely already have access to economic opportunity are heavily influencing poverty calculations. Future legislation should consider removing off-campus students enrolled in college when calculating the poverty factor.

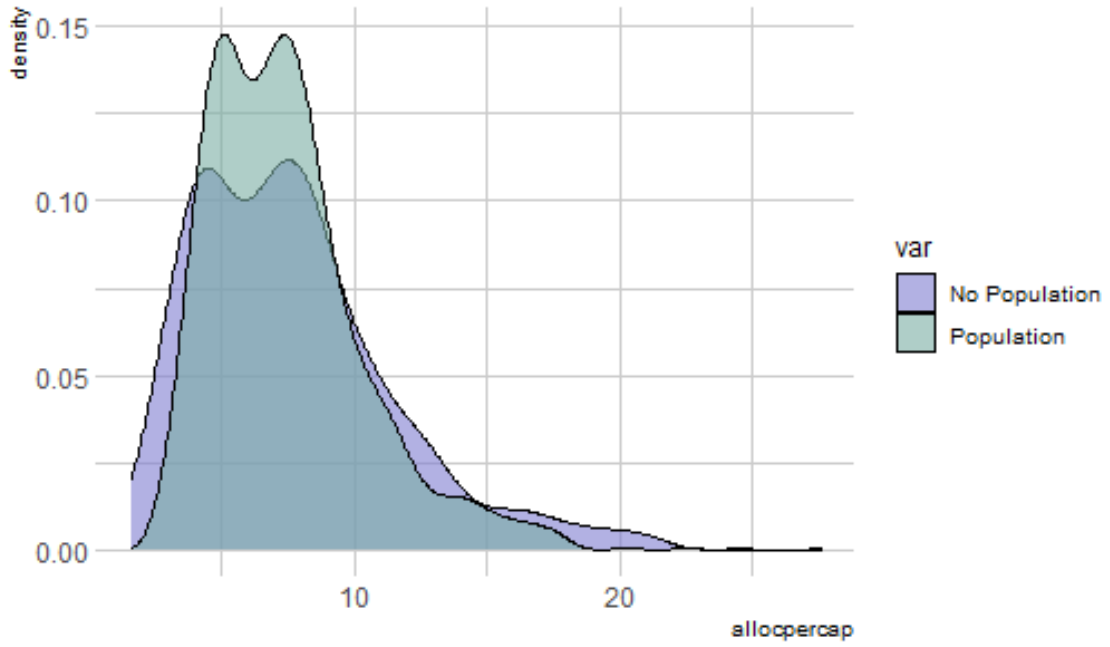
Formula A Inequity

Formula A's inclusion of a population factor contributes to an inequity, whereby high-need formula A grantees do not get substantially more funding than low-need formula A grantees, which contributes to the vertical equity issues in formula A identified in chapter 4. The original allocation included population as an attempt to direct more money toward big cities experiencing urban distress (Nathan et al., 1977), yet population was not removed on creation of the dual-formula system, which added formula B to better target big, economically declining cities experiencing urban distress. The number of individuals in a place is not an indication of per-capita need (only insofar as population correlates to other determinants of need), so larger places that may not be as relatively needy consume funds that could be allocated to more needy smaller cities, which narrows the distribution of per-capita allocations under formula A. Hypothetically, a formula that allocates only according to population would result in all jurisdictions receiving the same allocation per capita and would not be allocating to need. A formula that does allocate to need results in varying allocations per capita such that areas with higher need per capita receive more funding.

The current formula, by including a population factor, narrows the distribution of allocation per capita. Exhibit 26 shows the distribution of jurisdictions' allocation per capita for formula A grantees under a formula with and without the population factor (the latter being weighted only by poverty and overcrowding).[15] With no population factor, the density of jurisdictions' allocations per capita shows more spread, indicating greater separation in allocation per capita between high- and low-need communities—or more vertical equity. When excluding a population factor, the variance of CDBG allocations per capita among grantees increases 77 percent. The difference in allocation per capita for formula A grantees at the 20th and 80th percentiles becomes $6.09 per capita (with $4.90 per capita at the 20th percentile and $9.46 at the 80th percentile), compared with a difference of $4.55 in the current formula, a 33-percent greater spread among the 80th and 20th percentile grantees.

[15] It is likely under this new (no-population) formula that some areas are shifted between formulas A and B, but because this graph is for demonstration purposes only, the analysis restricts only to formula A grantees under the current (population-included) formula.

Exhibit 26. Allocation per Capita With and Without a Population Factor



Source: Office of Policy Development and Research calculations of the current Community Development Block Grant formula allocation and a hypothetical allocation

The formula for nonentitlement communities uses population in both formulas A and B. The same analysis applies; the nonentitlement formula creates an inequity in state allocation because larger nonentitlement populations receive more funding on a per-capita basis than their need may indicate. Population evens the distribution of funds, regardless of need, which contributes to the vertical equity issues among nonentitlement areas identified in chapter 4. Future legislation should consider removing or scaling back population as a factor in the distribution of CDBG funds.

Formula B Inequity: 1940 Housing

Formula B was created to target urban areas with signs of infrastructure distress. To target these areas, pre-1940 housing received a 50-percent weight in formula B. When formula B was introduced, pre-1940 housing corresponded with housing built 40 years prior, and because the formula has not changed, pre-1940 housing now equates to housing built more than 80 years prior. Among formula B grantees, similarly needy jurisdictions may get substantially different allocations due to the pre-1940 housing factor because communities with high levels of units built before 1940 may otherwise have little community development need, which contributes to the horizontal equity issues among formula B recipients identified in chapter 4.

Over time, more needy communities with less access to capital for improvements or demand for older housing units may demolish older buildings, whereas wealthier communities may maintain and even upgrade them to preserve the aesthetic qualities of their neighborhoods. According to 2019 Comprehensive Housing Affordability Strategy data, households earning less than 50 percent of HUD Area Median Family Income (HAMFI) occupy 31 percent of pre-1940 housing, and households making more than 120 percent of HAMFI occupy another 31 percent. The inclusion of the pre-1940 factor in the CDBG formula is picking up as many high-income households as low-income households.

American Housing Survey (AHS) provides household-level information that allows an analysis in time trends of household demographics occupying pre-1940 housing. Exhibit 27 shows that, over time, the poverty rate of tenants occupying pre-1940 housing has decreased because the mean household income of tenants occupying pre-1940 housing has slightly increased. With this trend, the CDBG formula will only continue to decline in its ability to target to need, as Collinson (2014) previously showed.

Exhibit 27. Pre-1940 Housing Poverty and Mean Household Income by Decade

Pre-1940 Housing	1999	2009	2020
Poverty rate	46.64%	30.6%	28.0%
Mean household income (2020 dollars)	$59,046	$57,833	$65,845

Because of the heavy weight on pre-1940 housing, and since pre-1940 housing cannot be constructed—or increase in stock—newer communities with high community need cannot catch up to older places with similar need and high shares of pre-1940 housing units. As the national stock of pre-1940 housing diminishes, the denominator for the pre-1940 calculation in the formula also diminishes. The formula calculates each jurisdiction relative to each other. As a reminder, the pre-1940 variable is calculated as follows:

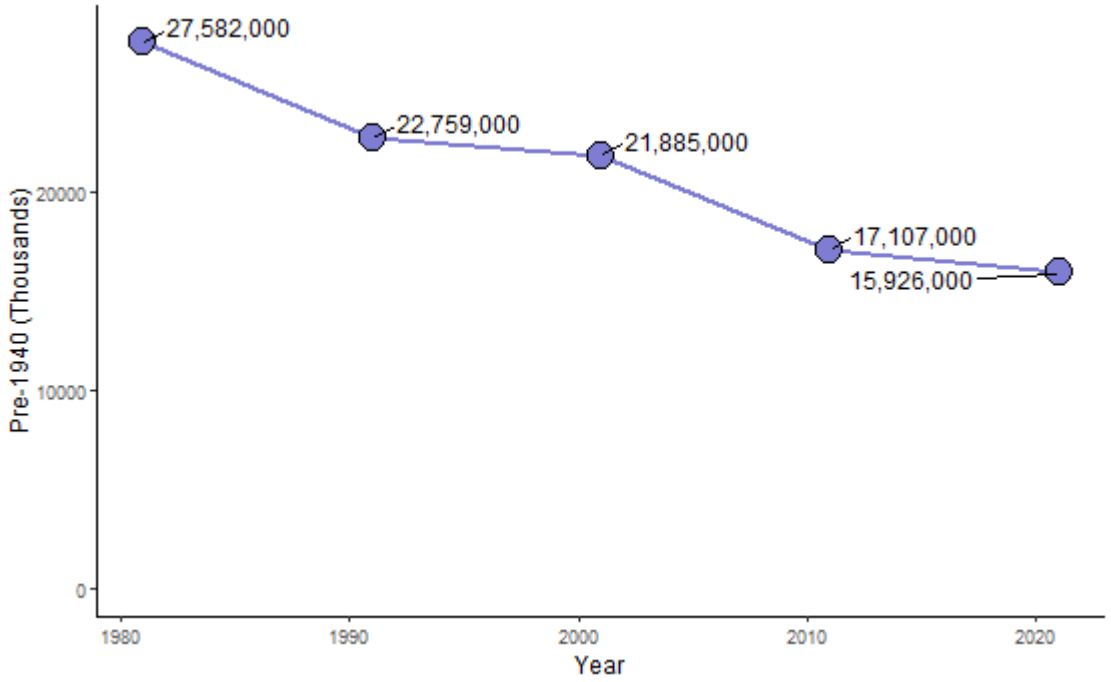
$$\text{Entitlement:} \quad \frac{Age_a}{Age_{MA}}$$

$$\text{Nonentitlement:} \quad \frac{Age_a}{Age_{Nent}}$$

MA represents the sum over metropolitan areas, and NENT represents the sum over nonentitlement areas. If rates of decline were uniform across places, it would not be an issue. However, although high-income areas preserve their pre-1940 housing, resulting in stagnant numerators, over time they face smaller denominators, which results in poor targeting to need by the pre-1940 housing proxy. Furthermore, because jurisdictions cannot gain pre-1940 housing, relatively new jurisdictions that may have high need have numerators that are either small or zero. The denominators depend on entitlement status. In fiscal year 2022, nonentitlement areas comprised 35.3 percent of pre-1940 housing, representing a decrease from 37.3 percent in fiscal year 2012.

Using AHS data, exhibit 28 shows pre-1940 housing by decade. More than 40 percent of pre-1940 housing has been removed from the market since 1980. In 2020, just under 16 million pre-1940 housing units existed.

Exhibit 28. Pre-1940 Housing by Year (1980–2020)



Source: Office of Policy Development and Research calculations of American Housing Survey data

The inclusion of the pre-1940 housing factor in the formula may create cascading consequences. The CDBG statute allows funds to be used for the "preservation of properties of special value for historic, architectural, or aesthetic reasons." High-income areas with historic housing, being fiscally equipped to address community needs, may have extra funds to preserve the historic houses that enhance the aesthetic quality of their neighborhoods. Richardson (2005) selects four high- and low-need communities to illustrate this point. Using those same jurisdictions, exhibit 29 shows the change in pre-1940 housing since 1980 for communities of high and low need. As seen, the low-need jurisdictions experienced small decreases in pre-1940 housing since 1980. Meanwhile, high-need communities have significant and large declines in pre-1940 housing. Such is the case for Detroit, which had 44.3 percent less pre-1940 housing in 2020 than it did in 1980.

Exhibit 29. Change in Pre-1940 Housing for Places With High and Low Need

	1980 Census	2016–2020 5-Year American Community Survey	Percent (%) Decrease 1980–2020
Low Need			
Newton, MA	17,364	16,054	7.5
Oak Park, IL	16,351	13,865	15.2
Royal Oak, MI	5,492	4,978	9.4
Evanston, IL	15,389	13,563	11.9
High Need			
Detroit, MI	214,968	119,795	44.3
Benton Harbor, MI	2,434	1,349	44.6
East St. Louis, IL	6,387	3,485	45.4
Gary, IN	13,422	9,520	29.1
Newark, NJ	57,577	27,882	51.6

The intent of including pre-1940 housing was to target slums and urban blight (Nathan et al., 1977). This analysis suggests that even if the formula is capturing some needy communities, it equally—or more than equally—captures wealthy communities, a trend made worse over time. Future legislation should consider language that captures housing built 40 years prior to the decennial year correlated to the year of allocation to avoid issues of decreased targeting to aging housing stock over time. Furthermore, legislation should consider only counting aged housing either vacant or inhabited by a household in poverty to ensure that the factor targets to structurally inadequate housing rather than just old but well-maintained housing.[16]

Formula B Overallocation: Growth Lag

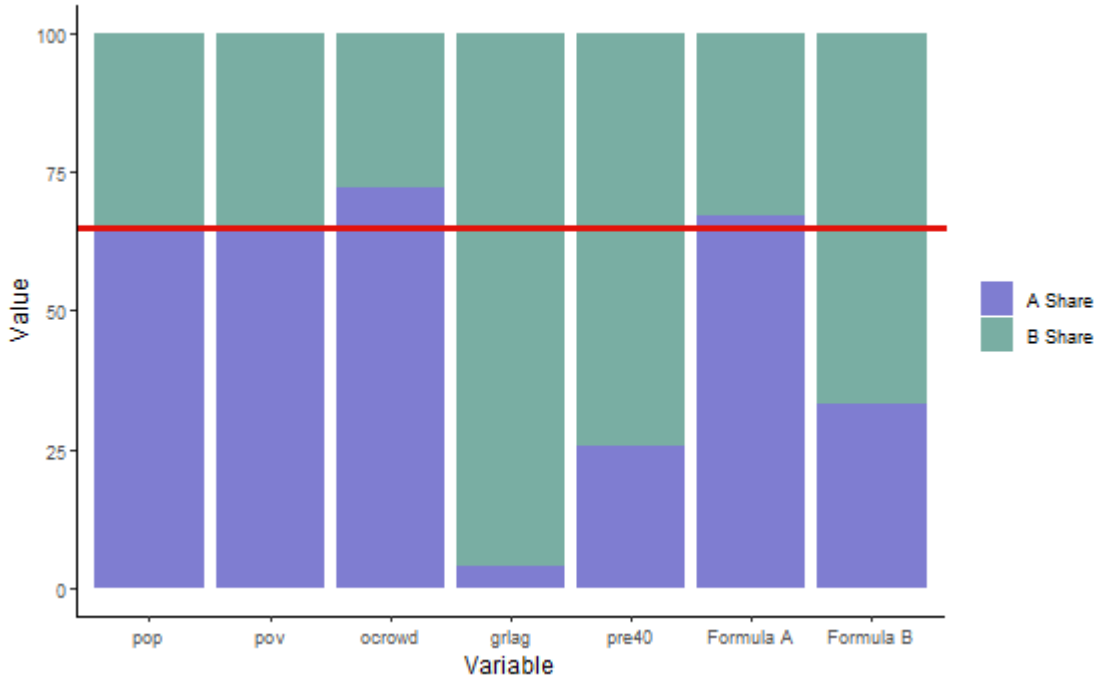
Chapter 4 found an overallocation of formula B grantees compared with formula A grantees relative to community need. Formula B grantees receive $14 per capita on average, whereas formula A grantees receive an average of $7.50, which the inclusion of and overreliance on the growth lag factor largely causes. Under a dual formula, all grantees contribute to the denominator of each factor—the nationwide total of the factor—regardless of under which formula the grantee is allocated. Formula B grantees perform well among the formula A factors, whereas the reverse cannot be said. Formula A grantees do not perform as well among the formula B factors, particularly on growth lag. This dissimilarity results in formula B grantees raising the denominator in formula calculations for formula A at a disproportionate rate than formula A grantees do for formula B. In other words, formula B grantees are good at defense (preventing formula A grantees from scoring high among formula A factors).

Formula B grantees typically receive significantly more allocation than similarly needy formula A grantees because the share of need formula A represents is spread across both formulas, whereas the share of need represented by formula B variables is more concentrated among formula B grantees. By share of need, this report refers to the percent of the national total of formula factors contained within either formula A or B grantees.

Exhibit 30 breaks down the share of need that both formulas represent. The thick horizontal line is the share of population represented by formula A and B grantees. If formula A and B grantees contained proportional shares of needs for each factor, then those grantees should contain a similar percentage of need according to each factor as their population suggests. As shown, poverty is equivalently distributed between the two formulas per capita, and formula A grantees slightly overrepresent the share of overcrowding. Meanwhile, formula B grantees significantly overrepresent growth lag (containing 96 percent of the total share of growth lag) and pre-1940 housing (75 percent). Altogether, when assigned the weighting according to each formula, formula B grantees compose 34 percent of the population and 33 percent of formula A share of need—the need across population, poverty, and overcrowding weighted by formula A. Meanwhile, they compose 67 percent of formula B share of need, which is almost double the share of need that their population suggests; hence formula B has almost double the per-capita allocation of formula A.

[16] Vacant should exclude categories of vacancy, such as seasonal use, which may just be secondary homes for well-off households.

Exhibit 30. Share of Need Among Community Development Block Grant Factors by Formula



Note: The thick red horizontal line represents formula A grantees' share of population.
Source: Office of Policy Development and Research calculations of HUD administrative data

As shown, formula B grantees have very high shares of growth lag and pre-1940 housing. To be clear, by nature of the dual formula, formula B grantees would be expected to overperform on formula B factors. However, formula B grantees significantly overrepresent their factors, which the definition of growth lag largely causes. Formula B's high share among growth lag is not surprising. Although all other variables are positive integers to which all jurisdictions contribute, growth lag consists only of jurisdictions experiencing growth lag—that is, the shortfall in population that an entitlement area has experienced as defined by its actual population growth since 1960 compared with the average population growth of all metropolitan cities since 1960. More than 60 percent of all jurisdictions record a zero on the growth lag variable. Therefore, jurisdictions that do record a value for growth lag, even if a low value, account for a relatively high amount of total growth lag.

Some high need, post-industrial cities receive relatively substantial amounts of funding under the growth lag factor. On every other measure, a jurisdiction can "score" up to one point per person or household. Detroit, Michigan, for instance, has a population of around 640,000 and around 260,000 households. On the population factor, Detroit scores one point per person, and on the poverty factor, Detroit scores up to one point per person—in total, Detroit can only score up to 640,000 on the poverty factor. For overcrowding and pre-1940 housing, Detroit can score up to 260,000. This system makes sense; need only exists insofar as there are people or households in need. For all the factors mentioned to this point, no jurisdiction scores zero. Every jurisdiction has some degree of need among overcrowding, poverty, and pre-1940 housing, even if small. Meanwhile, on growth lag, Detroit scores 2.1 million, or around 3.5 points per person. Detroit scores this high on a factor in which over 60 percent of jurisdictions score zero. The fewer people Detroit has, the more relative money they receive, and not by a little.

At the time of the Community Development Act, growth lag measured lag in jurisdiction growth during a 20-year timeframe. Now, growth lag measures a lag in growth during a timeframe of over 60 years,

which creates an issue when new communities become incorporated because the corresponding 1960 census population may not exist for their jurisdiction. In such cases, the growth lag is encoded as zero. At the same time, the 60-year gap does not capture areas with more recent population declines.

Meanwhile, growth lag increasingly funds relatively well-off communities because their growth lag is not a good indicator of their actual need. Many locations receiving funding from the growth lag factor are fully developed suburbs that are not seeking population growth. For instance, Somerville, Massachusetts, receives most of its funding from the growth lag factor, despite having a median household income of $102,311 in the 92nd percentile of median income among CDBG geographies with an allocation per capita in the 95th percentile. Growth lag is only 20 percent of one formula, yet it results in such a dramatic misallocation.

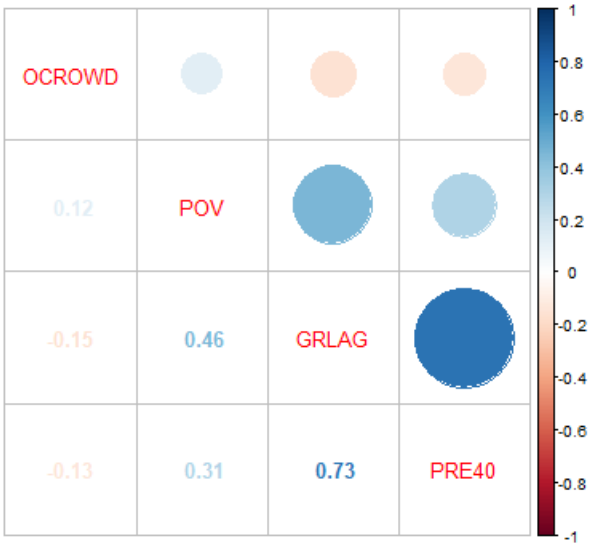
For some communities, growth lag is an indicator of economic decline. However, as shown, there are two main problems: first, it creates some unfairness between high-need cities that may have similar levels of distress, but because of the 1960 population baseline, or the different nature of distress, leads the city that receives funding due to growth lag to get a lot more than other similarly distressed cities. The second, more obvious problem is that some slow-growth communities are well-off. Their slow population growth, or even decline in population, is because of economic strength and/or policies that limit growth.

Formula B Overallocation: Formula B Factor Correlation

Formula B grantees also represent a significant share of pre-1940 housing, which follows naturally from the nature of the dual formula—recipients under one formula will represent more of that formula's factors by design—but the degree of share for formula B is likely larger than desirable. As discussed previously, pre-1940 housing decreases over time and cannot be created, and therefore, jurisdictions with pre-1940 housing represent a larger share of pre-1940 housing over time, causing them to be funded under formula B and face lower denominators. Therefore, formula B grantees performing extremely well on the pre-1940 factor follows from the previous analysis.

Furthermore, correlations between pre-1940 housing and growth lag explain the uniqueness of the B share of formula B factors. Exhibit 31 shows the per-capita correlation plot of the four factors other than population. Larger and darker circles represent a greater degree of correlation. Only two correlations are negative: overcrowding and growth lag as well as overcrowding and pre-1940 housing. Those correlations are colored red which is oppositely represented by a negative number in the bottom half. Blue represents a positive correlation between the variables, which is also indicated by a positive number at the corresponding intersection of the variables in the bottom half of the chart. Growth lag and pre-1940 housing have the highest correlation of 0.73, whereas overcrowding and poverty have the lowest correlation of 0.12.

Exhibit 31. Correlation Among Community Development Block Grant Formula Factors



Source: Office of Policy Development and Research calculation of HUD administrative data

Growth lag and pre-1940 housing variables are the most correlated factors among all CDBG factors, which causes duplicate factoring. Jurisdictions with high levels of one of these two factors are likely to have high levels of the other. Both variables are unique to formula B, leading to separation among "high-scoring" jurisdictions under formula B and "low-scoring" jurisdictions under formula B, which means that fewer jurisdictions are awarded under formula B. The issue, then, is not so much that formula B grantees perform well on formula A factors (although they do, as exhibit 30 shows) as it is that grantees awarded under formula B perform extraordinarily well on formula B factors. Formula B grantees are good at defense, but they are really good at offense (scoring high among formula B factors).

Because of the definition of growth lag and the duplicate factoring caused by correlation between pre-1940 housing and growth lag, formula B grantees only account for 35 percent of the population, yet they account for 50 percent of the total CDBG allocation. The formula, then, was successful in the goal of the Nathan et al. (1977) report to provide substantial funding for big, older city areas, with an intent of a strong formula B. However, the addition of formula B has resulted in overtargeting, even at the time of the creation of the dual formula (Bunce, Neal, and Gardner, 1983). Today, it affects both vertical and horizontal equity in allocating CDBG funds.

Future legislation should consider decreasing the weight of growth lag or eliminating growth lag altogether. Aging housing, being heavily correlated with growth lag, will already capture the needs of communities in economic distress that may be associated with growth lag. Growth lag is presumed to be indicative of community need due to the lack of economic activity and the infrastructure distress often associated with communities losing population. Aging housing stock captures the lack of economic activity because communities with large shares of aging housing are not likely to be developing new buildings.

Systematic Reweighting of Factors

The nominal weights on each factor can be misleading due to the refactoring that occurs as part of the dual formula. A couple of issues result in each factor being weighted differently than their formula weight implies. Both are a result of mathematical properties, one resulting from metropolitan calculation of factors and the other from the nature of a dual-formula system.

First, the formula relies on the sum of factors in metropolitan areas for entitlement communities, rather than summing across all entitlement communities. Entitlement communities contain more than 29 million people in poverty, whereas metropolitan areas contain around 36 million people in poverty. Poverty, therefore, ends up with a smaller numerator (in sum) than the denominator such that poverty has a hidden diminisher of 0.80. Exhibit 32 illustrates this reweighting of factors by example.

Exhibit 32. Example of Metropolitan Denominators

Imagine a formula that allocates funds to City Y and City Z, using 50 percent poverty and 50 percent overcrowding. Cities Y and Z have 20 people in poverty and 20 overcrowded households. Forty people in total are in poverty, and 40 households are overcrowded. If these numbers were the denominators, the formula would work as follows for City Y and City Z:

$$\frac{Pov_i}{Pov_{total}} * 0.5 + \frac{OCrowd_i}{OCrowd_{total}} * 0.5 = \frac{20}{40} * 0.5 + \frac{20}{40} * 0.5 = 0.5$$

The result (0.5) is then multiplied by the total allocation. Each city receives 50 percent of the total allocation, and each factor accounted for 50 percent of the distribution of the funds. However, imagine that the formula used a denominator for poverty that included only poverty in metropolitan areas: 50. Then, the formula works as follows:

$$\frac{Pov_i}{Pov_{MA}} * 0.5 + \frac{OCrowd_i}{OCrowd_{total}} * 0.5 = \frac{20}{50} * 0.5 + \frac{20}{40} * 0.5 = 0.45$$

The total allocation would then be under by 0.10 (1 - 0.45 * 2), but the formula is pro-rata adjusted. Each city, having similar demographics, gets 50 percent of the total allocation, but poverty, with a hidden diminisher of $\frac{40}{50}$ (0.8), accounts for just more than 44 percent of the distributed funds in this formula. Poverty plays less of a role in the allocation than its 50-percent weight implies.

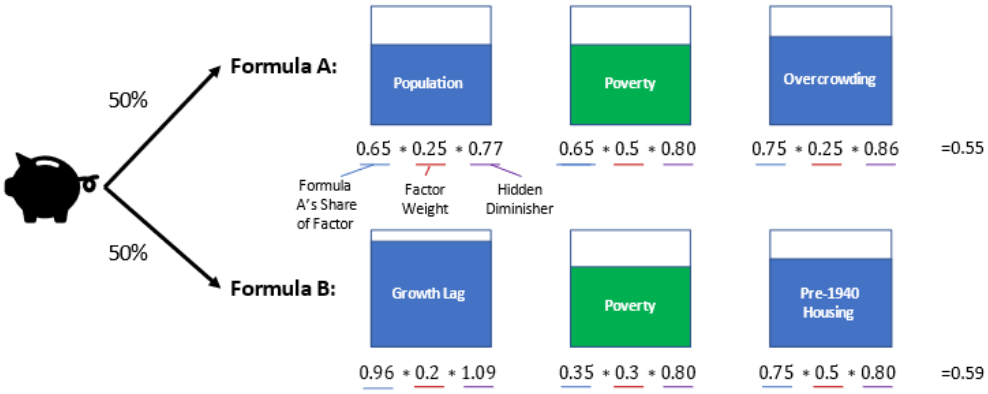
Because of the relative nature of the formula, the diminisher matters only insofar as it differs from the multipliers of other variables, and it does: overcrowding, 0.86; pre-1940 housing, 0.80; population, 0.77. Overcrowding, therefore, benefits the most from the discrepancy between the denominator—of metropolitan areas—and the sum of the numerators—of each entitlement community because its relative diminisher is greater than the other factors, except growth lag. Growth lag, meanwhile, has a hidden multiplier due to differentiation between counties and cities. Although cities face a denominator based on the sum of growth lag among cities, counties face a denominator based on the sum of growth lag among cities and counties. Therefore, the city fractions for growth lag in sum add up to one. When adding in the county fractions, the growth lag variable overshoots with a hidden multiplier of 1.09. This differential treatment also means that counties allocated under formula B, facing a higher denominator for growth lag than cities allocated under formula B, may be slightly underallocated.

The nature of the dual formula also results in factors ultimately having a different aggregate weight in the formula than the nominal weights may suggest. This result is because the formulas are not mutually exclusive. That is, formula A grantees do not only affect formula A, they also affect the denominators of formula B. The percentage of funds distributed according to each factor in the final allocation, then, is not simply the weight of the factor in the formula multiplied by the percentage of funds that the formula distributes.

To understand, exhibit 33 calculates the poverty share of allocation in fiscal year 2022. Each formula received approximately one-half of the total allocation, with formula A grantees containing 65 percent

of poverty and formula B containing the other 35 percent. Because both formulas receive one-half of the funds, one might expect poverty's share of the distribution of the total allocation to be the average of the two factor weights: 40 percent. However, because formula B receives one-half of the allocation, despite containing less than one-half of the population in poverty, the true poverty share lies much closer to the formula B weight.

Exhibit 33. Poverty's Share of Total Allocation Calculation



$$\textbf{\textit{Poverty's Share of Total Allocation}}$$
$$= [Poverty's\ Share\ of\ A] * [A's\ Percent\ of\ Funds] + [Poverty's\ Share\ of\ B] * [B's\ Percent\ of\ Funds]$$
$$= \frac{0.65 * 0.25 * 0.80}{0.55} * 0.5 + \frac{0.35 * 0.3 * 0.80}{0.59} * 0.5$$
$$= 0.30\ \textbf{(30\%)}$$

Source: Office of Policy Development and Research calculations of the Community Development Block Grant formula allocation

Upon final calculation, poverty accounts for 30 percent of the distribution of all CDBG funds to entitlement communities. Broken out by formula, difference in nominal factor weights—those in the formula versus real factor weights, the amount actually being disbursed according to that factor—become evident. Exhibit 34 shows the real and nominal weights. Poverty accounts for very little real weight in formula B, with 14 percent compared with its 30-percent nominal weight. Meanwhile, growth lag accounts for 35 percent of distributed funds under formula B despite a 20-percent weight, which confirms the analysis that growth lag plays a large role in formula B overallocation. Formula A real weights are closer to their nominal weights than formula B, although overcrowding's real weight is 4 percentage points greater than its nominal weight.

Exhibit 34. Real and Nominal Factor Weights by Formula

Formula A				Formula B		
	Real Weight (%)	Nominal Weight (%)			Real Weight (%)	Nominal Weight (%)
Poverty	47	50		Poverty	14	30
Population	24	25		Pre-1940	51	50

Overcrowding	29	25		Growth Lag	35	20

Exhibit 35 shows the real weights for all factors between both formulas. Growth lag accounts for 18 percent of the distribution of CDBG funds, which is both less than the 20-percent weight implied by its weight on formula B and greater than the 10-percent weight implied by the fact that only one-half of the funds are allocated under formula B.

Exhibit 35. Proportion of Community Development Block Grant Funds Distributed According to Each Factor in Entitlement Communities

Formula Variable	Percent (%) of Community Development Block Grant Funds
Growth Lag	18
Poverty	30
Population	12
Pre-1940	26
Overcrowding	14
Total	100

This section identifies two important considerations when constructing formulas. First, a formula that does not have denominators that represent the sum of the numerators may result in factors being weighted differently than their legislative nominal weights would imply. Second, a dual formula will result in differential weighting by nature of the formulas not being mutually exclusive. Legislators may be fine with both reweightings. However, legislators should understand the true weights of factors after running the formula.

Underweighting Poverty

Every study on the CDBG formula since its inception has placed a heavier aggregate weight on the local poverty rate in defining community need and in proposing new formulas than the current formula does in allocation (Collinson, 2014; Dommel and Rich, 1987; Neary and Richardson, 1995; Richardson, 2005). The legislation directs that more than 70 percent of CDBG funds be used to benefit low- and moderate-income individuals, yet poverty does not receive heavy weighting in the formula. As the previous section showed, poverty accounts for 30 percent of the funds distributed under the CDBG formula. Poverty is the heaviest weighted variable in the formula, 4 percentage points ahead of pre-1940 housing, but is less than one might anticipate, which results in high variability in allocation per person living in poverty.

Formula B overallocation plays a large role in the underweighting of poverty. However, formula B grantees compose a disproportionately small portion of poverty compared with the total amount of funds that formula B receives, so poverty plays less of a role in formula B allocations than its 30-percent weight would imply. In fiscal year 2022, only 14 percent of the funds under formula B were distributed via the poverty factor. Meanwhile, 35 percent were distributed by growth lag and 51 percent by pre-1940 housing compared with their respective weights of 20 and 50 percent.

By design, formula B prioritizes growth lag and pre-1940 housing over poverty, which means that jurisdictions could have relatively low-poverty rates but still receive relatively large allocations. On average, formula B grantees receive $109 per person living in poverty, compared with $57 for formula A grantees. Of the 200 CDBG geographies receiving the highest allocations per person living in poverty, only 7 were allocated under formula A. Overcrowding heavily drove the allocations of the 7 formula A recipients. For instance, Fremont, California, is relatively well-off, but the high housing costs likely create

high levels of overcrowding. All of the 7 formula A grantees in the 200 CDBG geographies with the highest allocation per person living in poverty were California jurisdictions with high housing costs.

Puerto Rico municipalities comprise the bottom 11 cities according to allocation per person living in poverty. Although San Sebastian Municipio receives $32 per person living in poverty, with a 50-percent poverty rate and median household income of $15,995, Haverford, Pennsylvania, receives $461 per person living in poverty, with a 3-percent poverty rate and median household income of $114,554. Pre-1940 housing and growth lag drive Haverford's high allocation, yet Haverford does not otherwise have high community needs.

Other highly impoverished cities also face stark contrasts to cities with high allocations per person living in poverty. Arlington, Massachusetts, receives $448 for each person in poverty, with a poverty rate of 5 percent and a median household income of $125,000. Meanwhile, Hattiesburg, Mississippi, receives $37 per person in poverty, with a poverty rate of 28 percent and a median household income of $36,000. Pre-1940 housing drives Arlington's allocation with a smaller but not insignificant allocation coming from growth lag.

Economic Opportunity: Opportunity Insights Data

One of the primary objectives of the community development program is to "expand economic opportunities," particularly for "persons of low and moderate income." Therefore, an effective CDBG formula would, to some degree, be correlated with areas demonstrating a relative lack of economic opportunity. New data from Opportunity Insights can be equipped to test whether the CDBG allocation in the 1980s went primarily to areas of low economic opportunity, one proxy for community need as the objectives of the statute define.[17] This objective to expand economic opportunity provides a chance to do an outcome-oriented, retrospective analysis of CDBG formula targeting.

Opportunity Insights data linked earnings for people in their mid-30s to the census tract in which individuals spent the most time growing up. The dataset is composed of 20 million children born between 1978 and 1983. The data are not available at the place level but are available at the county level.

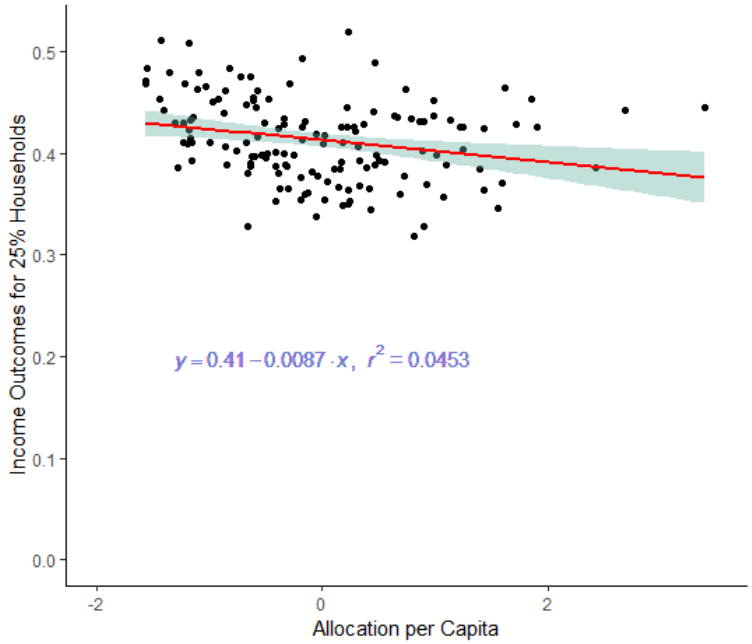
To analyze the CDBG formula's ability to target economic opportunity, this report links Opportunity Insights data to a 1980 allocation of CDBG funds at the county level. Using 1980 Census data, this report computes a mock 1980 CDBG allocation for counties with populations above 200,000 that qualify for entitlement status.[18] This analysis links Opportunity Insights data on income outcomes for children living in households at the 25th and 50th percentiles of income. If the CDBG formula effectively targets areas in need of "expand[ed] economic opportunities," then the allocation should increase for areas with worse earnings outcomes for those children.

Exhibit 36 shows the relationship between a standardized allocation per capita and economic opportunity (future earnings) for children from households in the 25th income percentile. As allocation per-capita increases, an allocation targeting to lack of economic opportunity should display a decent correlation (R-squared) and result in a decrease in outcomes, a negative slope. That is, the places that are allocated more money should be areas of less opportunity. However, the correlation is insignificant with an R-squared of 0.0453, and the slope is nearly negligible at 0.0087; an increase of one standard deviation of allocation per capita is associated with a 0.0087 decrease in (percentile) income outcomes of children in households in the 25th percentile of income.

[17] https://opportunityinsights.org/data/.

[18] For the calculation, CDBG allocations were calculated without subtracting entitlement cities.

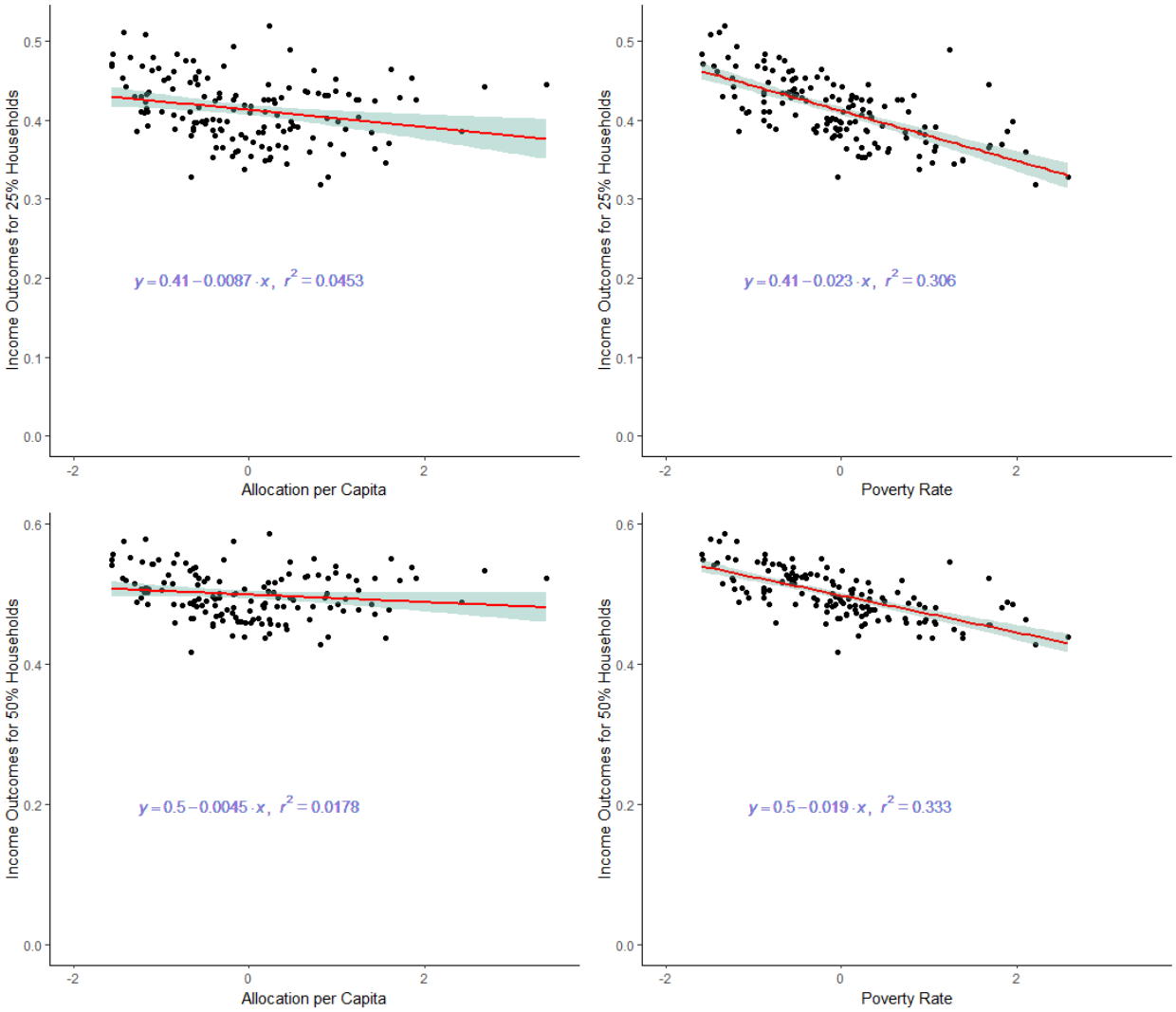
Exhibit 36. Earnings Outcomes by Community Development Block Grant Allocation Among Children in Households at 25th Percentile Earnings



Sources: Office of Policy Development and Research calculations of the Community Development Block Grant formula allocation; Opportunity Insights data

To provide a comparison of these results, a theoretical allocation is constructed based on a formula that is distributed entirely according to poverty. Exhibit 37 shows the percentile income outcomes for households in the 25th and 50th percentiles for income by county compared with the CDBG allocation per capita in 1980. The poverty rate and allocation per capita were standardized to allow comparisons between slopes. The top left graph is the same as exhibit 36, and the top right maintains the same y-axis, with the theoretical poverty allocation as the x-axis. The bottom row does the same comparison between the two formulas but with income outcomes for households in the 50th percentile—moderate income.

Exhibit 37. Earnings Outcomes by Community Development Block Grant Allocation and Poverty Only Allocation Among Children in Households at 25th and 50th Percentile Earnings



Sources: Office of Policy Development and Research calculations of the Community Development Block Grant formula allocation; Opportunity Insights data

The formula did a very poor job of targeting to economic opportunity for low- and moderate-income households. The formula allocated funds such that jurisdictions with relatively similar allocations per capita may have significantly different economic opportunity, which is shown through low R-squared values of 0.0453 and 0.0178 for households in the 25th and 50th percentiles, respectively. In contrast, a formula accounting only for poverty would have done a better job of fairly targeting opportunity, with R-squared values of 0.306 and 0.333, respectively. The poverty rate had the highest correlation to opportunity among the other formula variables. The formula also did a poor job of allocating funds, such that counties with less opportunity received more funding with slopes of 0.0087 (25th percentile) and 0.0045 (50th percentile). Meanwhile, poverty had slopes of 0.023 and 0.019, respectively.

This retrospective analysis suggests that poverty alone would better correlate to lack of opportunity than the CDBG formula. Economic opportunity was one of the primary motivators of the initial CDBG formula and may be a greater motivator in a future iteration. However, economic opportunity does not cover all objectives of the act, although it may serve as a good proxy for the other objectives. The

opportunity index measures only the observable income outcomes of children in 1980 and does not account for the outcomes of adults from that time. Income opportunity also does not account for personal choices. Individuals in areas with lower incomes may choose to stay in those areas despite the opportunity to go to an area of higher opportunity. Those areas then may have less community development need than the Opportunity Insights data would suggest. Health and safety are also outcomes of interest that may act independent of, although they are plausibly correlated with, economic opportunity. In essence, this analysis should not be used solely to determine allocation of funds, but the staggering lack of allocation to economic opportunity does provide evidence that the current allocation is not prioritizing communities of need to the greatest possibility. A primary cause may be the low weight assigned to poverty in the current formula.

Discussion

All told, the current formula has eight primary issues that this report highlights.

1. **College Town Overallocation.** Because the poverty factor includes college students, college towns are being overallocated.
2. **Formula A Inequity.** The population factor evens the distribution of funds between high-need and low-need formula A grantees.
3. **Formula B Inequity.** Similarly needy formula B grantees may receive very different allocations due to the pre-1940 housing variable.
4. **Formula B Overallocation.** Due to formula B grantees disproportionately overrepresenting the share of need among formula B factors, formula B grantees receive more allocation than their needs should imply.
5. **Nonentitlement Under Allocation.** Although funds are split such that nonentitlement areas receive 30 percent of the allocation, nonentitlement areas represent greater than 30 percent of the share of most formula variables, which results in less funding going to nonentitlement areas than their needs imply.
6. **Systematic Reweighting of Factors.** The formula reassigns weights of the factors in two ways. First, the formula uses metropolitan area denominators for calculation of the distributions, and second, the nature of the dual formula results in factors being either more or less favored than their weights imply.
7. **Timeframe Lag.** The pre-1940 housing factor and the growth lag factor, which measures lag from 1960, will not capture communities that are either relatively new and have high needs or have relatively recently increased in needs.
8. **Underweighting Poverty.** The current formula, in aggregate, results in just greater than 30 percent of funds distributed according to poverty, which results in great discrepancies in allocations per person living in poverty.

Based on the analysis suggested here, a new formula should consider the following changes:

- **A Single Formula.** Switching to one formula that allocates for both entitlement and nonentitlement communities with denominators that represent the national average of each factor.
- **A Better Poverty Variable with More Importance.** Include a poverty factor that does not capture college students. Poverty should receive at least 50-percent weight.
- **Target to Aging Housing Stock Needs of Poor and Declining Communities.** This factor should be housing built 40 or more years prior to the recent decennial census (for fiscal year 2023, that would be pre-1980 housing), and the factor should restrict to either vacant houses or houses occupied by households in poverty.

- **Growth Lag Should Be Reconsidered.** Growth lag could be 30 years from the previous decennial census, which will capture generational change in population (reflective perhaps of economic desirability) while still capturing communities with relatively recent decreases in population. Because many jurisdictions will not contribute to the denominator of growth lag, the factor should receive a small weight, because a jurisdiction with even a little bit of growth lag will represent a great fraction of total growth lag, or the factor should be considered for removal with another proxy for economic decline in its place. Policymakers should consider that an aging housing variable that includes houses occupied by those in poverty or vacant may capture the true needs of slow growth communities while not allocating to wealthy suburbs.
- **Do Not Include a Population Variable.** Population itself does not measure need. The allocation formula would be better targeted to need by only including people living in poverty (excluding college students) to scale the amount of funds allocated to the jurisdiction, not the full population.

Chapter 6. Other Considerations

Insular Area Set-Aside

Insular areas (American Samoa, Guam, Northern Mariana Islands, and the Virgin Islands) have received a set amount of $7 million dollars in Community Development Block Grant (CDBG) funding annually since the inception of the CDBG formula. Census data on insular areas are sparse, although progress is being made.[19] This report provides some basic demographic information on insular areas. Using 2010 poverty variables, the most recently available poverty data, the allocation per person living in poverty in insular areas was $225 compared with $85 in noninsular areas. Insular areas had a 28-percent poverty rate. Meanwhile, 2020 census data reveal that approximately 20 percent of those aged 25 years or older in insular areas have achieved a bachelor's degree or greater.

Insular areas face much larger costs than the contiguous United States because their imports carry with them heavy shipping costs that do not benefit from the same economies of scale as the contiguous United States. Therefore, the national poverty threshold is likely an imprecise metric to measure poverty, as a concept, in insular areas. In addition, because of the high costs to build, insular areas also have relatively low capacity to meet their needs and, therefore, require greater funds.

The economic situations of the insular areas are often distinct from those of the states. In 2020, all insular areas experienced population loss from 2010: American Samoa lost 10.5 percent; Northern Mariana Islands lost 12.2 percent; Guam lost 3.5 percent; and the U.S. Virgin Islands lost 18.1 percent. The insular areas have economies that are heavily dependent on tourism or military spending, which can make them vulnerable to economic downturns. In addition, the insular areas often face challenges related to infrastructure and access to resources, which can limit economic development.

This report does not come out conclusively on the relative needs of insular areas to the rest of the CDBG program, but it does provide analysis that may help policymakers in thinking through the allocation made to insular areas.

[19] The American Community Survey (ACS) is not conducted in insular areas, but in the 2020 census, a long-form questionnaire like the ACS was conducted in insular areas. At the time of this report, only population counts for insular areas had been released. Read more here: https://www.census.gov/library/stories/2021/10/first-2020-census-united-states-island-areas-data-released-today.html.

Conclusion

The current Community Development Block Grant (CDBG) formula is inefficient and outdated. Formula B, introduced to focus on areas of urban distress, is now the cause of many issues in the formula. The dual formula causes reweighting of factors that cause poverty to be underweighted. Meanwhile, the pre-1940 housing and growth lag factors significantly overfund slow-growth, pre-war communities with otherwise little development need. To solve the problems laid out in this report, chapter 5 offered specific suggestions related to individual variables. These considerations can help in formulating an update to the current formula to better target the statutory objectives of the CDBG program.

Legislators should consider giving HUD the same flexibility provided under its HOME Investment Partnerships Program to make periodic regulatory adjustments to the formula, which helps the agency update the formula to adjust for shifts in economic trends and circumstance. The National Research Council's first recommendation regarding formula allocation programs states that ". . . legislators should consider giving some flexibility to program agencies, especially in determining what data sources and procedures should be used to produce estimates of the components of allocation formulas" (Louis, Jabine, and Gerstein, 2003).

This report provides the foundations for Congress to consider updating the formula to leverage federal funds more effectively to "provide decent housing and a suitable living environment and expand economic opportunity." Serious consideration should be given to updating the formula.

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