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REPORT BY THE

Comptroller General

OF THE UNITED STATES

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RELEASED

Criteria For Participation In The Urban Development Action Grant Program Should Be Refined

According to the Department of Housing and Urban Development's eligibility criteria for the Urban Development Action Grant Program, 52 percent, or 333 of the 646, large cities and urban counties in the United States are "severely distressed" and eligible for Urban Development Action Grants.

GAO's review disclosed that the data upon which HUD's criteria are based is old and/or may be unreliable. Some of the time frames and assumptions HUD used are questionable.

Also, HUD's method of determining eligibility does not take into account severity of distress for most of the individual criteria. GAO's tests of alternative methods of determining distress indicated that about 25 of 333 currently eligible cities would be replaced by about 25 cities now ineligible for Urban Development Action Grants.

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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The Honorable L.H. Fountain
Chairman, Subcommittee on
Intergovernmental Relations
and Human Resources
Committee on Government
Operations
House of Representatives

As requested in the subcommittee's June 7, 1979, letter, this is our report on the criteria used to measure urban distress, and therefore eligibility, for the Department of Housing and Urban Development's Urban Development Action Grant Program. The report points out that the data upon which the criteria are based is old and of varying degrees of reliability. In addition, the report makes several recommendations which can improve the eligibility criteria.

As arranged with your office, we will make this report available to the Secretary, Department of Housing and Urban Development; the Director, Office of Management and Budget; and other interested parties 30 days after the issue date, unless you publicly release its contents earlier.

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT TO THE SUBCOMMITTEE ON INTERGOVERNMENTAL RELATIONS AND HUMAN RESOURCES, COMMITTEE ON GOVERNMENT OPERATIONS, HOUSE OF REPRESENTATIVES

CRITERIA FOR PARTICIPATION IN THE URBAN DEVELOPMENT ACTION GRANT PROGRAM SHOULD BE REFINED

D I G E S T

The Urban Development Action Grant Program helps revitalize "severely distressed" cities by using public funds to attract private investment in industrial, commercial, or neighborhood projects. Through fiscal year 1980 about $1.5 billion has been provided for the program. The Housing and Community Development Act of 1977, which established the program, did not specify the number of cities to which the program should be targeted. Instead, the Department of Housing and Urban Development (HUD) established eligibility criteria to determine which cities qualified. For metropolitan cities and urban counties HUD selected six criteria--age of housing, poverty rate, population growth, per capita income growth, unemployment rate, and employment growth--to measure eligibility for the program. (See p. 3.)

To be eligible, most cities must be ranked in the lower half of all cities for three of the six criteria. This has resulted in 333 of the Nation's 646 large cities and urban counties (about 52 percent) being eligible for the program. (See p. 3.)

LIMITATIONS IN THE ELIGIBILITY CRITERIA

Data available for the six eligibility criteria is often old and/or of varying degrees of reliability. For example, the age of housing criterion is based on the 1970 census. Although the national unemployment rate is considered fairly reliable, local unemployment rates--another criterion--are not reliable.

The data is weak largely because it is based on 1970 census information (now 10 years old) and later estimates which are not completely accurate.

Some criteria are based on questionable time frames and assumptions. For example, the time frame used to measure population growth lag (1960-76) may cover too long a period to reflect current population trends. Also, the age of housing criterion measures the age of all housing, even though a 1979 HUD study stated that age of rental housing may be a better indicator of poor housing conditions. HUD officials told GAO that they plan to test these alternative measures if data is available. (See pp. 8 and 10.)

There is a significant degree of correlation among three of the six criteria--age of housing, employment growth, and population growth. As a result, there may be some redundancy among these criteria. Alternative indicators which are distinct measures of distress should be tested. (See p. 16.)

ELIGIBILITY PROCESS SHOULD BE REFINED

HUD's current eligibility process does not take into account the degree of severity of distress for most of the individual criteria. Each city is considered for eligibility through a system that classifies it as either meeting or not meeting each criterion. Cities which have relatively high levels of distress for any one of the criteria are not given more points than cities which barely meet the threshold level of distress, except for poverty.

For example, a city with 6 percent unemployment is just as qualified on this criterion, according to HUD, as a city with 14 percent unemployment. (See p. 19.)

In testing alternative eligibility formulas which are sensitive to relative degrees of distress, GAO noted that about 50 of 646 communities would have their eligibility status changed--about 25 marginally eligible cities would be replaced by about 25 marginally ineligible cities. (See p. 19.)

RECOMMENDATIONS

The Secretary of Housing and Urban Development should:

--Refine the eligibility process by utilizing a method which recognizes severity of distress for each of the criteria. (See p. 24.)

--Evaluate a broad range of alternative distress criteria in order to reduce the significant statistical correlation of the current set of criteria. (See p. 18.)

--Test alternative measurements for three of the current criteria (population growth lag, age of housing, and job lag). (See p. 18.)

--Obtain and use 1980 census data as soon as it is available. (See p. 18.)

AGENCY COMMENTS AND OUR EVALUATION

HUD agreed with GAO's recommendations. (See app. III.) GAO believes that, if properly implemented, HUD's actions will improve the eligibility criteria used in the program.

Contents

		Page
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Background	1
	Scope and methodology	2
2	DEVELOPMENT OF THE ELIGIBILITY CRITERIA	3
	Six criteria selected to measure distress	3
	Selected criteria serve as direct measures or proxies for those in legislation	4
	Eligibility thresholds and targeting levels developed by HUD	6
	Conclusions	7
3	LIMITATIONS OF THE ELIGIBILITY CRITERIA	8
	Data used to support the eligibility criteria has inherent weaknesses	8
	New census data will improve the criteria	16
	Alternative criteria should be considered	17
	Conclusions	18
	Recommendations	18
	Agency comments	19
4	HUD's ELIGIBILITY PROCESS SHOULD BE REFINED	20
	HUD's eligibility point system is not sensitive to severity of distress	20
	Alternative eligibility techniques	22
	Conclusions	25
	Recommendation	25
	Agency comments	25
APPENDIX		
I	Spearman rank order correlation coefficient matrix for the six eligibility criteria	26

APPENDIX		Page
II	Frequency distributions for data used in the eligibility criteria	27
III	Letter dated March 14, 1980, from the Secretary of Housing and Urban Development	31

ABBREVIATIONS

BLS	Bureau of Labor Statistics
GAO	General Accounting Office
HUD	Department of Housing and Urban Development
UDAG	Urban Development Action Grant

CHAPTER 1

INTRODUCTION

We reviewed the Department of Housing and Urban Development's Urban Development Action Grant (UDAG) Program at the request of the Chairman, Intergovernmental Relations and Human Resources Subcommittee, House Committee on Government Operations. The subcommittee specifically requested that we analyze the reliability and validity of the criteria used to measure urban distress and, therefore, eligibility for the program.

BACKGROUND

The Housing and Community Development Act of 1977 (Public Law 95-128), dated October 12, 1977, authorized HUD to assist severely distressed cities and urban counties in alleviating physical and economic deterioration through stimulation of commercial and industrial development and reclamation of deteriorating neighborhoods. The legislation required HUD to issue regulations setting forth minimum eligibility standards of physical and economic distress based on such factors as

--the age and condition of housing stock including abandoned housing,

--average income,

--population outmigration, and

--stagnating or declining tax base.

In addition, only cities which HUD determines have provided (1) housing for persons of low and moderate income and (2) equal opportunity in housing and employment are eligible for the program.

UDAG grants are awarded in a two-step process. First, a city must be determined eligible to participate in the program. Eligibility is based on whether a city meets or exceeds established distress levels. Second, an eligible city applying for a grant must demonstrate that a proposed project is feasible, that it includes public and private investment, and that firm financial commitments have been made to the project. The basic objective of the UDAG Program is to use public funds in a manner which attracts private investment to revitalize severely distressed cities.

The legislation requires that a reasonable balance be maintained in the program among industrial, commercial, and neighborhood projects. Through February 1980, 35 percent of the projects selected were industrial, 35 percent were commercial, and 30 percent were for neighborhood projects; HUD has awarded 315 UDAG grants to metropolitan cities and 279 grants to smaller cities.

A total of $800 million was provided for the UDAG Program for fiscal years 1978 and 1979. In fiscal year 1980, the program funding was increased to $675 million. At least 25 percent of each year's available funding is set aside for cities under 50,000 population which are not central cities of standard metropolitan statistical areas.

SCOPE AND METHODOLOGY

We made our review at HUD headquarters in Washington, D.C., where the UDAG Program eligibility criteria were developed and implemented. We reviewed the applicable legislative history and HUD records and interviewed both present and former program officials at HUD headquarters. We discussed the quality of the input data used to derive the program's eligibility criteria with staff in the Bureau of the Census, Department of Commerce, and Bureau of Labor Statistics (BLS), Department of Labor, which generate the statistical data. We also discussed the data and criteria used by HUD with the Office of Federal Statistical Policy and Standards, Department of Commerce, which provides policy guidance to agencies concerning the selection and use of statistics in Federal grant programs.

We also conducted a number of statistical analyses of HUD's eligibility determinations. Our analyses were confined to the 646 metropolitan cities and urban counties which were considered for eligibility in the large cities part of the program.

This report deals only with initial eligibility for the UDAG Program; we did not evaluate project selection and funding decisions. We have issued a report and given testimony dealing with the project selection process: "Improvements Needed in Selecting and Processing Urban Development Action Grants" (CED-79-64, Mar. 30, 1979), and testimony before the Subcommittee on Intergovernmental Relations and Human Resources, Committee on Government Operations, House of Representatives (May 23, 1979).

CHAPTER 2

DEVELOPMENT OF THE ELIGIBILITY CRITERIA

Neither the UDAG authorizing legislation nor its legislative history specifically define "severely distressed" or the percentage of cities which were intended to be the targeted recipients of the program. Instead, HUD was directed to establish the program targeting levels through the thresholds in its eligibility criteria. These thresholds include

--requiring that in most cases three of six criteria be met for eligibility and

--using the median value for each criterion as the threshold for receiving eligibility points.

These thresholds are important because they determine the number of cities that are eligible for the program. For example, these thresholds have resulted in 52 percent of all large cities and urban counties being eligible.

SIX CRITERIA SELECTED TO MEASURE DISTRESS

HUD considered nine measures of distress in developing the eligibility criteria but reduced the number to these six: 1/

--Age of housing: percent of all residential housing built before 1940.

--Poverty: 1970 poverty population divided by estimated population in 1976.

--Population growth lag: percentage change in population between 1960 and 1976.

--Income growth lag: absolute difference between per capita income in 1975 and 1969.

--Job lag: ratio of retail and manufacturing jobs in 1972 to retail and manufacturing jobs in 1967.

--Unemployment rate: ratio of average unemployment to the total labor force in 1978.

1/The criteria have remained the same, but the time periods are adjusted periodically as more current data becomes available.

Criteria considered but not used

Three factors included in the legislation were not directly included in the eligibility criteria--housing abandonment, tax base, and condition of housing--based on comments from the Office of Management and Budget (OMB), the Treasury Department, and HUD.

Housing abandonment

According to HUD records, the Treasury Department and OMB expressed reservations about the abandonment criterion, measured by delinquent property taxes, because it depended on a city's practices for collecting delinquent property taxes which can vary among jurisdictions.

Tax base

The Treasury Department commented that the growth in taxable property criterion failed to take into account a city's flexibility in assessing property value. OMB agreed.

Condition of housing

Internal HUD comments on draft regulations stated that communities may use different standards for assessing condition of housing, which could lead to problems of comparability.

SELECTED CRITERIA SERVE AS DIRECT MEASURES OR PROXIES FOR THOSE IN LEGISLATION

HUD officials told us that the six criteria selected were chosen because they were either direct measures or proxies for the eligibility factors discussed in the authorizing legislation. Following is a discussion of the four factors in the legislation and the criteria HUD used to measure them.

Age and condition of housing including residential abandonment

HUD selected one direct measure for a portion of this factor--age of housing stock. HUD did not find either a direct measure or a satisfactory proxy for condition of housing stock or residential abandonment. Several measures were considered and rejected. For instance, overcrowded units was rejected because it is more a measure of how a unit is used rather than its condition. Annual housing survey data was rejected because the sample size is too small and its timing is not appropriate.

Average income factor

Three direct measures were considered and one--the net change in per capita income level--was selected. This factor was selected rather than (1) per capita income level and (2) percent increase in per capita income because HUD considered it the best measure of relative income levels among cities.

HUD officials told us that two other criteria selected--poverty and unemployment--also reflect the average income factor.

Population outmigration factor

Two measures were considered for this factor--population decline and population growth lag--and the latter was selected. HUD officials told us population decline was rejected because they felt it was not as good an indicator of recent population outmigration trends. HUD officials said a large number of cities were found to have declining populations during the years since 1970 and thus HUD could not select a specific time frame that reflected this pattern on a uniform basis for all cities. Consequently, HUD selected population growth lag from 1960-76 as the indicator of distress, because it identifies cities' population growth or decline over an extended period of time. As a result of this decision, any city with less than 16.68 percent population growth between 1960 and 1976 meets the threshold for this factor.

Stagnating or declining tax base factor

HUD identified only one direct measure of this factor--growth in assessed property value--but rejected it. Two other indirect measures were selected for this distress factor--unemployment and job lag. HUD believed that unemployment could be used as a proxy for this factor because high unemployment does affect a community's tax base.

Job lag was also selected as a proxy for the tax base growth because HUD believed the extent of retail and manufacturing employment in a community is related to the quantity of commercial, industrial, and residential structures.

The direct indicator, growth in assessed property value, was considered very seriously but was finally rejected because of variations among cities of the time schedule used for reassessments and some cities' practice of withholding properties from the tax rolls as an economic development incentive.

ELIGIBILITY THRESHOLDS AND TARGETING LEVELS DEVELOPED BY HUD

Neither the UDAG authorizing legislation nor its legislative history established the level or percentage of cities to which the program should be targeted; rather, eligibility was left to be established by HUD through regulation.

Based on HUD's regulations, a city must be worse off than the median of all large cities for three of the six criteria (except when there are high or low levels of poverty) to be eligible for the program. This has resulted in 52 percent of all large cities and urban counties being classified as severely distressed and thus eligible for the program. HUD officials told us that this program is more targeted than other Federal economic development programs.

Number of criteria which must be met for eligibility

The number of criteria which must be met to be eligible for the UDAG Program directly affects the size of the eligible universe. Initially, HUD had considered relatively strict eligibility requirements that would have resulted in about 37 percent of all large cities and urban counties being eligible. The final regulations, however, lowered the number of criteria which must be met to three of six, resulting in a 52-percent eligibility level for large cities and urban counties. Thus, the number of criteria which must be met has a significant effect on the degree to which the program is targeted to assisting severely distressed cities. According to a UDAG task force member, the number of criteria which had to be met for eligibility was reduced after an analysis of more rigid standards showed the number of cities which would be eligible.

Use of the median as an eligibility threshold qualifies half the cities on each criterion

HUD's selection of the median as the threshold in evaluating each city for eligibility results in half of all cities passing the eligibility threshold for each individual criterion.

HUD did not decide to use the median until the third draft of the program regulations. This draft indicated the median would be used but the rationale behind this decision was not discussed. According to a UDAG task force member, the use of the median was selected after an analysis disclosed the number of cities which would be eligible under differing assumptions.

Program targeting levels

HUD records indicate that although 52 percent of all large cities and urban counties are eligible for the UDAG Program, those cities and urban counties have 47 percent of the total population in all large cities and urban counties. For the total UDAG Program (large cities and urban counties and the small cities part of the program), the total population of all eligible areas is only 35 percent of the total national population.

HUD officials told us that the UDAG Program is further targeted in the project selection process. For example, our analysis of grants made through January 1980 indicated that most of the grant funds awarded to large cities and urban counties (73 percent of all large city grant funds) went to the most needy half of all eligible large cities and urban counties. The most needy one-fifth of all eligible large cities and urban counties received 30 percent of the grant funds, while the least needy one-fifth of these received only about 7 percent of all grant funds. For the small cities part of the program, 69 percent of all small city grant funds was awarded to the most distressed half of all eligible small cities.

CONCLUSIONS

HUD selected six distress criteria to represent the four distress factors included in the legislation which authorized the UDAG Program. Some of the criteria selected are direct measures of the factors included in the legislation, while others are proxies for the factors in the legislation because HUD did not identify direct measures that are reliable and/or comparable.

Neither the authorizing legislation nor its legislative history established the level or percentage of cities to which the program is to be targeted. Instead, HUD was directed to establish the program targeting levels through the thresholds in its eligibility criteria.

To be eligible for the program, cities must be worse off than the median of all cities for three of the six criteria, except for cities with high or low levels of poverty. These threshold levels have resulted in about 52 percent of all large cities and urban counties being eligible for the program.

CHAPTER 3

LIMITATIONS OF THE ELIGIBILITY CRITERIA

The six criteria HUD selected to measure urban distress and eligibility for the UDAG program are based on data that is old and of varying degrees of reliability and that was not specifically designed for HUD's use. Thus, the criteria cannot always be relied on to capture current distress problems. The data, however, generally is the most current available.

Some of the criteria are based on questionable time frames and assumptions. For example, a shorter time frame for the population growth lag criterion may better reflect current distress, and age of rental housing instead of age of all housing may be a better indicator of distress.

A correlation analysis of the criteria showed that three of the six criteria were significantly correlated. This may mean the indicators do not represent distinct dimensions of distress. We believe alternative criteria which are distinct measures of distress should be tested.

DATA USED TO SUPPORT THE ELIGIBILITY CRITERIA HAS INHERENT WEAKNESSES

The current criteria used by HUD to measure eligibility for the UDAG Program are based on data that is now old and/or of varying degrees of reliability. The data has these weaknesses largely because it is based on 1970 census data (now 10 years old) and later estimates which have varying degrees of reliability. Following is a discussion of each of the six criteria, including the time periods considered, the data used to support them, and potential improvements.

Population growth lag

The population growth lag criterion is based upon a city's population change over time. For eligibility in fiscal year 1980, a city's population could not grow more than 16.68 percent between 1960 and 1976. The 1960 population data came from the 1960 decennial census and the 1976 population data is derived from a census estimation process which updates population levels in between the 10-year censuses.

HUD uses 1960 census data, which is almost 20 years old, although more recent data is available. As a result, this criterion measures population changes over a longer period of time than may be relevent to measure current population change patterns. Additionally, 1960 population figures are not adjusted for annexations which can unfairly cause a city to

appear to have grown more than it really has. Finally, the data is not precise because the 1976 population figures are estimates which are made between the decennial censuses.

Time frame reflects relatively long-term conditions

This criterion encompasses a 16-year time frame despite the availability of more recent data. HUD uses 1960 data as a base period rather than the more recent 1970 data because it wanted to identify those cities which have lost population over an extended period.

While population decline over a long period depicts historical patterns, it does not focus on current population patterns. Events which occurred in the early 1960s (which are accounted for in HUD's current measurement) may have little if any relevance today. Cities experiencing population decline in a more recent period (for example 1970-76) may be more likely to be those which are experiencing current distress.

A Census official told us that if identifying recent trends is the objective of this criterion, a shorter time frame should be used.

We believe that the use of a more recent time period (like 1970 or most recent estimate) would better identify cities which are currently experiencing distress. HUD officials told us that they have begun testing the shorter time period of 1970-76.

1960 census data not adjusted for annexations

The 1960 census population figures are not adjusted for annexations. As a result, a city which annexed an adjoining town between 1960 and 1970 would appear to have grown more than it actually has between 1960 and 1976. For example, assume a city had a 1960 population of 50,000 and annexed an unincorporated area of 25,000 population between 1960 and 1970 so that the 1976 population estimate for the combined area is 75,000. Although this combined city actually had zero population growth, under HUD's method of calculation it would appear that the city had a 50-percent population growth (75,000 compared to 50,000) because the 1960 population is not adjusted for the annexation. Such a city would be ineligible under the population growth lag criterion even though its actual rate of growth (zero) would qualify it.

Thus, HUD's current calculation methodology for this criterion is inequitable for cities which annexed areas between 1960 and 1970. Because annexations are updated in the 1970 census, this problem will be eliminated if HUD changes to the 1970-76 time frame to measure population growth or decline.

Accuracy of census data

Neither the decennial census nor the population estimates made between the 10-year intervals are entirely accurate. As a result, cities close to the eligibility threshold could be affected by data inconsistencies. While more accurate data is not available, HUD may be able to minimize the effects of data inaccuracies by using an eligibility technique which is sensitive to severity of distress on each individual factor. (See ch. 4.) This is particularly important for cities which are now either marginally eligible or ineligible for the program.

A Census Bureau evaluation of population estimates disclosed a 2.9 percent variation between these estimates and an actual count of population for areas of 50,000 population or more. The evaluation noted that the variation rate increases for areas of smaller population.

Age of housing

The age of housing criterion is the percent of houses built before 1940 compared to the total houses in each city. It is based on 1970 U.S. census data and includes all types of housing--single family, multifamily, mobile homes, etc.--both renter and owner occupied. Year built refers to when the building was first constructed, not when it was remodeled, added to, or converted. For fiscal year 1980, a city would be eligible on this criterion if 33.77 percent or more of its total housing stock was built before 1940.

Age of housing data is collected on a 20-percent sample basis and is therefore subject to errors because it is collected by a sampling method rather than a complete count. In addition, a special census study concluded that pre-1940 housing was understated by about 3.8 percent in the 1970 census because of inaccurate responses by those surveyed.

This criterion does not take into account condition of housing, however, and as a result may not be the most accurate discriminator of distress. For example, pre-1940 housing which has been well maintained or recently renovated would help a city to meet this criterion. On the other hand, more recently built housing which may be in poorer condition, have a lower value, and generate less tax revenues (such

as lower income rental housing) would count against a city's receiving an eligibility point for this factor.

Age of rental housing may be a more accurate measure of distress

A 1979 HUD study of the age of housing indicator, based on data for a sample of cities, concluded that residents of pre-1940 housing show a much higher incidence of housing and neighborhood problems than residents of post-1940 housing. However, it noted that the data could be refined to determine those areas with the greatest housing problems. It concluded that housing problems are pinpointed more accurately when pre-1940 housing is associated more directly with rental housing and low income categories of residents. This conclusion is based in part on information obtained from the annual housing survey conducted for HUD by the Census Bureau.

Based on a statistical sampling of 75,000 households, this survey provides current information on the size and composition of the housing inventory, characteristics, and indicators of housing and neighborhood quality. This study showed that rental units built before 1940 have a greater likelihood of housing and neighborhood deficiencies than all pre-1940 housing units. For example, the study showed that pre-1940 rental housing in central cities had a 10.3-percent incidence of poor housing compared to only 1.5-percent poor housing for owner-occupied pre-1940 housing. Additionally, pre-1940 rental housing had a 9.7-percent incidence of poor neighborhoods, compared to only a 3.9-percent incidence in owner-occupied pre-1940 housing.

These results provide a strong indication that there is a significant difference between pre-1940 rental housing and pre-1940 owner-occupied housing. The study further showed that post-1940 rental housing generally had poorer characteristics than pre-1940 owner-occupied housing.

The U.S. Census Bureau gathers data on rental housing age on a city by city basis. This data was obtained in the 1970 census sampling from which HUD obtains the data it presently uses.

Because rental housing more accurately measures condition as well as age, we believe that age of rental housing rather than the age of all housing would more accurately capture poor housing and neighborhoods and thus would be a better criterion for the UDAG Program.

We discussed these observations with UDAG Program officials; they told us they planned to test rental housing as an alternative to the current criterion.

Per capita income

The per capita income criterion in fiscal year 1980 is determined by the increase in per capita income from 1969 to 1975. A city was eligible if its per capita income did not increase by more than $1,762 during this time period.

Comparability between cities is affected because the data is based on a 20-percent sample which raises the potential of variations between the sample and a complete count of income. Officials at the Census Bureau (which produces this data) told us that they do not know the reliability of the per capita income estimates.

Finally, this criterion uses income data which, although the latest available, is 5 and 10 years old. Thus the risk that current conditions are not being represented is increased.

Limitations of per capita income data

The 1970 per capita income data is based on a 20-percent sample. Due to sampling variability, this data may differ from the results of a complete count, particularly in small cities.

The Census Bureau began preparing per capita income estimates (updates) in 1972 with the advent of the General Revenue Sharing Program. As yet, Census has not evaluated the reliability of this process in a comprehensive manner.

Due to the potential variance in per capita income caused by the sampling error, the Assistant Chief of Census' Population Division told us that HUD's use of a cutoff to establish eligibility under this criterion may be a problem. This official believes the data effectively measures relative differences between areas but HUD's use of a cutoff may place undue reliance on these estimates. (As mentioned earlier, ch. 4 discusses alternative methods which could minimize this problem.)

Increases in per capita income are affected by the cost of living. In higher cost of living areas, increased income will buy less. Thus, on a city to city comparison, a small increase in per capita income could actually be more valuable than a larger increase in a city where the cost of living is higher. Unfortunately, cost of living indexes are computed for only 39 metropolitan areas in the United States. As a result, this criterion carries with it a weakness which cannot be readily corrected unless or until cost of living data is produced for a larger number of cities.

Poverty

The poverty criterion is based on the 1970 census determination of the number of poor people in each city divided by the most current estimate of the city's population. In fiscal year 1980, a city is eligible if its poverty rate equals or exceeds 11.07 percent based on the 1976 estimate of its population.

The most significant problems with this criterion are that (1) the data is based on a 1970 sample and a 1976 estimate, neither of which is reliable, (2) it cannot be adjusted for cost of living differences, and (3) it is based on the number of people in poverty in 1970 (data is now 10 years old).

Data accuracy

The 1970 poverty population was determined in the 1970 census along with per capita income. It therefore exhibits the same reliability problems as the per capita income criterion discussed above. The primary problem involves the potential for data inaccuracy because of the 20-percent sampling method used to obtain the data.

Comparability affected by cost of living variations between cities

The poverty level in any city is a national statistic and does not recognize regional, State, or local variations in the cost of living except for the farm, nonfarm differential. 1/ As a result, the size of the population in poverty is, in reality, understated in cities with above average costs of living and overstated in cities with below average costs of living in terms of relative degree of economic distress experienced by the populace.

Criterion does not recognize increases in poverty population

Because HUD periodically updates the population level while leaving the number in poverty at the 1970 level, this criterion has the effect of increasing the percentage of poor in areas with declining population and decreasing it in areas experiencing population growth. HUD justifies this methodology on the assumption that cities growing in population also

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1/Farm families are considered to be more self-sufficient, and therefore the income level which establishes poverty status is set at a slightly lower level.

grow in wealth while cities with declining populations generally lose wealth. However, the Assistant Chief of Census' Population Division stated that limited analysis has been performed on the shifting economic mix of cities with changing populations.

Additionally, we believe that using the 1970 figure for people in poverty as a measure of distress in 1980 is a substantial assumption that may distort this criterion as an accurate measure of the current state of economic distress in any given city because migration of poverty level families is not considered.

These problems for the poverty criterion are compounded by the fact that HUD weights poverty more heavily than the other five criteria in determining UDAG eligibility by allowing cities to receive two eligibility points if poverty is 1-1/2 times the median and to lose one point if poverty is less than half the median.

Job lag

The job lag criterion is based on the 5-year economic census and represents the ratio of the change in retail and manufacturing jobs in each city from 1967 to 1972. The maximum employment increase a city could experience and retain eligibility on this criterion in fiscal year 1980 is 7.08 percent. Due to the lack of data for smaller areas, job lag is not used to determine eligibility for smaller cities with populations under 25,000.

The basic weaknesses of this criterion are that manufacturing and retail employment may not adequately represent the entire economy and the data is 8 and 13 years old. Thus, current conditions are represented only if conditions have not changed in 8 years.

Several important employment sectors not included

It is not clear the extent to which employment in manufacturing and retail sectors reflects total employment in the economy.

Manufacturing and retail employment represents a large percentage of total employment. However, a substantial portion of the work force is not considered. In terms of major industry divisions, manufacturing is the largest sector of the economy, representing 22 percent of the civilian labor

force in 1972. Government and Government enterprises surpassed wholesale and retail trade in 1972 which historically had been the next largest sector.

The economic censuses provide a comprehensive statistical profile of a large segment of the national economy. This program includes censuses of manufacturers, mineral industries, construction industries, and transportation. In 1972 these censuses accounted for nearly 77 percent of the $785 billion of national income originating in the private sector. The principal industry groups not covered included finance, insurance, and real estate; agriculture and forestry; communications; and electric, gas, and sanitary services.

Retail sales may be a better indicator of distress

In terms of measuring economic activity, the Chief of the Census Bureau's Retail Census Branch stated that retail sales may be a better indicator than retail employment. This official told us that employees can be shifted to other sectors of the economy through productivity increases but at the same time a city's economic condition could be stable or improving. For this reason, the job lag criterion may portray inaccurate signals as to the condition of the economy. Consequently, this official concluded that changes in retail sales may reflect a more reliable trend in the comparison of economic conditions among cities.

Unemployment

In fiscal year 1980 HUD used the average unemployment rate for each city in 1978 to compare cities for eligibility. A city was eligible under this factor if its unemployment rate equaled/ exceeded 5.95 percent.

The unemployment rate is only used as a criterion for cities with populations over 50,000. It is not used for smaller cities because statistics are not published for many cities with smaller populations.

Although the national unemployment rate is considered to be fairly reliable, the local unemployment rates are not reliable.

Local unemployment estimates not reliable

Local unemployment statistics are developed by the Bureau of Labor Statistics through a composite technique. This technique employs Census Bureau statewide samples (the Current Population Survey), numbers of persons drawing

unemployment compensation, and estimates of persons looking for work but not drawing compensation.

Under the composite technique, States build employment and unemployment statistics for large urban areas and other State labor markets (comprising one or more counties) by adding the numbers of employed and unemployed persons who are insured to estimates of those uninsured. These figures are then adjusted proportionately to agree in total with statewide statistics from the Current Population Survey. In effect, this adjustment is the first step in distributing the statewide estimates obtained from the Current Population Survey to substate areas.

The adjusted labor market statistics are broken down to smaller areas using labor force relationships among those areas obtained from the 1970 census, population estimates, or claims for unemployment compensation. Small areas are assigned the same unemployment rates as the larger areas they are within.

The composite technique produces unreliable figures principally because of the methods used to (1) estimate the amount of the local labor force outside the unemployment insurance system and (2) break down labor market statistics to smaller areas. Estimates of local labor forces not covered by unemployment insurance are based on ratios established years ago, mostly on a national level.

Breakdown of labor market statistics to smaller areas also lacks precision. Distributing employment and unemployment among areas in the same ratios shown by the 1970 census is not likely to reflect the current situation.

According to a BLS economist, the error rates in State and local estimates cannot be predicted because the data is not gathered by statistical sampling techniques.

NEW CENSUS DATA WILL IMPROVE THE CRITERIA

Several data weaknesses (such as data age and reliance on questionable estimates), which prevent the present criteria from measuring distress on a more current and accurate basis, will be alleviated when the 1980 census data becomes available to HUD. Thus, we believe it is important for the Census Bureau to give HUD the information from the 1980 census as soon as possible after it is compiled.

In addition to the 1980 decennial census, Public Law 94-521, dated October 17, 1976, provided for a new mid-decade

census in 1985. This census will provide HUD with more current data and will reduce its reliance on outdated data and inaccurate estimates as the decade progresses. Census has not yet determined, however, all types of data which will be collected in the mid-decade census. We believe it is necessary for HUD to continue to work with Census now regarding the inclusion of data which HUD needs to administer its programs.

ALTERNATIVE CRITERIA SHOULD BE CONSIDERED

Correlation analysis is a form of statistical testing which measures the relationship between two variables. We conducted a correlation analysis to determine the degree of correlation among the six criteria HUD uses because a high degree of either positive or negative correlation may have the effect of double-counting distress for those criteria which are highly correlated. 1/

The correlation analysis showed that the age of housing criterion had a -0.77 correlation with the population growth lag criterion and a -0.63 correlation with the job lag criterion. Additionally, the job lag and population growth lag criteria had a correlation of 0.66. All other correlations were less than 0.5. (See app. I.)

HUD did not consider all potential criteria

We found no indication that HUD considered a wide range of distress indicators when it developed the UDAG criteria. While not all inclusive, a partial list of possible factors which could be considered includes

--population density,

--crime rate,

--education levels,

--dependency,

1/The correlation coefficient is a normalized number ranging from -1 to +1. If the correlation coefficient between two factors is close to +1 (or -1), then the two factors exhibit a high positive (negative) correlation. If the correlation coefficient is zero, no redundancy occurs in using both factors. Thus, correlation coefficients close to zero may be desirable.

--budget deficits, and

--female heads of households.

HUD officials told us that they recognized refinements in the criteria are possible and that a study of this area is currently being conducted for HUD. We believe that as part of its effort in evaluating the current criteria, HUD should test other factors as potential indicators of distress.

CONCLUSIONS

The six eligibility criteria HUD uses to make eligibility determinations for the UDAG program are based on unreliable and old data. The data is weak largely because it is based on 1970 census data (now 10 years old) and later estimates which are not completely accurate. Many of the data problems will be ameliorated when the 1980 census data becomes available to HUD. The inaccuracy may be reduced now by using an eligibility method which is more sensitive to severity of distress on individual factors. (See ch. 4.) The use of 1980 census data at the earliest practical time will eliminate the problem of old data.

Some of the criteria are also based on questionable assumptions. For example, the time frame used to measure population growth lag (1960-76), while indicating long-term decline, may not reflect current population patterns. Also, the age of housing criterion measures the age of all housing even though a HUD study has shown that age of rental housing may be a better indicator of poor housing conditions. In addition, we believe retail sales as opposed to retail employment may be a better indicator for HUD's job lag criterion and warrants testing by HUD.

Because some of the current criteria have substantial degrees of correlation, we believe distinct alternative measurements of distress should be tested to determine whether better criteria exist.

RECOMMENDATIONS

We recommend that the Secretary of Housing and Urban Development

--obtain and use 1980 census data as soon as it is available;

--test alternative measurements for three of the current criteria (population growth lag, age of housing, and job lag); and

--evaluate a broad range of alternative distress criteria with the objective of reducing the significant statistical correlation among the current set of criteria.

AGENCY COMMENTS

HUD officials told us they agreed with these recommendations. They said they will obtain and use the 1980 census data as soon as possible and will test alternative measurements of current criteria as well as a broad range of alternative distress criteria.

CHAPTER 4

HUD's ELIGIBILITY PROCESS SHOULD BE REFINED

HUD's current process of determining eligibility for the UDAG Program is not sensitive to severity of distress for each of the criteria. Eligibility is decided by a system that classifies a city as either meeting or not meeting each criterion. Cities which have relatively high levels of distress for any one of the criteria are not given more points than cities which barely meet the threshold level (except for poverty, see p. 13).

HUD's system is not sensitive to severity of distress on the individual criteria, except poverty. For example, a city with 14 percent unemployment is economically worse off than a city with 6 percent unemployment, yet both cities would meet HUD's current unemployment standard.

In testing alternative eligibility formulas which are sensitive to the severity of distress on each criterion, we noted that about 50 cities would have their eligibility status changed. About 25 currently eligible cities would be replaced by about 25 ineligible cities. Most of the cities affected would be those which are either barely eligible or ineligible under HUD's current system. All cities which are clearly at the top or bottom of HUD's current eligibility spectrum would not have their eligibility status changed. Cities can now be awarded anywhere from -1 to 7 eligibility points. Using alternative formulas, we found that most of the eligibility changes would occur for cities which had either 2 or 3 eligibility points (3 points are needed for eligibility).

As shown in chapter 3, the data upon which the criteria are based has varying degrees of reliability. While a system of eligibility points which is based on severity of distress cannot eliminate the problems of unreliable data, it could minimize the problem.

HUD's ELIGIBILITY POINT SYSTEM IS NOT SENSITIVE TO SEVERITY OF DISTRESS

HUD's present process for determining eligibility fails to recognize severity of distress on the individual criteria, except for poverty. The current eligibility process works like a light switch to separate the distressed jurisdictions from those not distressed on each separate distress criterion. A more sensitive mechanism that worked like a light dimmer, rather than a light switch, would be more effective because it would recognize shades of distress on each individual criterion.

Because HUD's current system does not recognize the severity of distress for individual measures, some cities may qualify by barely meeting three of six distress criteria. On the other hand, a city experiencing extreme distress on two criteria would not qualify for the program even if it was only slightly below the threshold on the other four criteria. For example, we identified one city which had over 8 percent unemployment and a poverty rate of over 15 percent but failed to qualify.

Cities may be classified as meeting or not meeting thresholds based on unreliable data for one or more of the criteria. Here a small error in data accuracy can make a tremendous difference. For example, we found one city which has an unemployment rate of 5.94 percent, thus it does not receive a UDAG eligibility point; if its unemployment rate were 5.95 percent, it would be awarded the eligibility point for this criterion. The unemployment data, however, is not completely reliable, and a city could have its eligibility status affected based on inaccurate data. National unemployment data has a small standard error, but for cities the degree of confidence for this data element is much lower.

A system which awards eligibility points based on relative degrees of distress on individual measures could minimize these problems because the extreme effects of small data errors would not occur.

Descriptive statistics

In order to analyze HUD's UDAG eligibility process, we calculated descriptive statistics, such as the mean, standard deviation, and coefficient of variation, to provide an indication of how the six individual criteria would perform when combined. (See table 1.)

The coefficient of variation (standard deviation divided by the mean) is a number that measures relative dispersion about the mean. The low coefficients of variation for per capita income growth lag, unemployment rate, and job lag indicate that the data is centered very tightly around the mean. This increases the probability that a city may gain or lose eligibility points based on data that is not significantly different between cities which are eligible or ineligible. The larger coefficients of variation for percent in poverty and age of housing indicate that there is a discernible difference in the data. Population growth lag is the criterion with the largest coefficient of variation, indicating a higher degree of dispersion. (See app. II.)

Table 1

Descriptive Statistics For The UDAG Distress Criteria

Criteria	Number of observations	Mean	Standard deviation	Coefficient of variation
Percent in poverty	646	11.32%	7.19%	0.64
Age of housing	646	35.27%	23.21%	0.66
Population growth lag (note a)	646	37.18%	55.12%	1.48
Per capita income growth lag	646	$1806.54	$401.45	0.22
Unemployment rate	b/ 592	6.23%	2.13%	0.34
Job lag	b/ 573	1.16	0.34	0.29

a/Values for this criterion were capped at 200 percent to minimize statistical distortions in the distribution; 26 cities had growth levels of more than 200 percent.

b/Some data was not available for these factors. Data supplied by HUD.

ALTERNATIVE ELIGIBILITY TECHNIQUES

There are several possible methods that could be used to establish eligibility that would better recognize severity of distress. One method, for example, would be a simple point system for each factor based on a city's relative position, using any number of intervals to distinguish relative degrees of distress. Another method that is even more sensitive to distress severity involves the use of standardized scores to allocate eligibility points. 1/

1/Standardization expresses observations in terms of the standard deviation. The difference between an individual observation and the mean when divided by the standard deviation is the standardized value (or z-score) for that particular observation. The overall effect of standardization is to express all factors in the same units of measurement.

UDAG program officials told us that they agree these methods might be better than the current system and that they plan to test them for use in the program.

Simple point method

A simple point system which allocates UDAG eligibility points on a given number of intervals would better recognize relative degrees of distress on individual factors (except poverty) than HUD's current eligible/ineligible system. One possible system would be to have four intervals. Cities in the highest quartile (top 25 percent) could receive three points, those in the next highest quartile could receive two points, those in the third quartile could receive 1 point, and those in the last quartile could receive no points. Next, the points for each community could be totaled and a ranking of all communities obtained. A cutoff point, which is based on degrees of distress, could be established. For example, instead of the current requirement that cities meet three of the six criteria, they would have to accumulate a specified number of the 18 possible points to be eligible. The larger the number of intervals used (such as 10 intervals), the more sensitive the system would be to severity of distress.

Standardized score method

A system which uses standardized scores for each of the six criteria is very sensitive to severity of distress and recognizes even very small differences in data values among cities. However, HUD officials told us they felt there may be offsetting problems such as the effects of data errors. HUD uses such a system now in making funding decisions through the use of its impaction and distress formulas, 1/ but it does not use such a system in making eligibility determinations.

To determine the effect of using standardized scores in the initial eligibility process, we constructed distress indexes for all 646 large cities and urban counties which HUD considered for eligibility for the UDAG Program. We held the size of the eligible universe at its current level, 333 eligible cities, and contrasted our list of eligibles with HUD's current list of eligibles.

1/The impaction formula, which weights age of housing (0.5), poverty (0.3), and population growth log (0.2), is by HUD regulation the primary selection criterion for funding metropolitan cities. An additional selection criterion is the distress formula that gives equal weights to the other three eligibility criteria.

We found that based on three different indexes, between 48 and 56 cities would have their eligibility status changed using the standardized score method. (See table 2.) Index 1 is a combination of current impaction and distress indexes HUD uses in making funding decisions; index 2 weights all six criteria equally; and index 3 weights poverty twice and each of the other five criteria once.

Table 2

Changes in Eligibility Status When Large Communities Are Ranked by Different Indexes

HUD's points	Index 1 (note a)		Index 2		Index 3	
Eligible: 3 to 7 points Ineligible: -1 to 2 points	Cities gaining eligibility	Cities losing eligibility	Cities gaining eligibility	Cities losing eligibility	Cities gaining eligibility	Cities losing eligibility
7	-	0	-	0	-	0
6	-	0	-	0	-	0
5	-	0	-	0	-	0
4	-	1	-	1	-	0
3	-	27	-	26	-	24
2	23	-	22	-	21	-
1	5	-	5	-	3	-
0	0	-	0	-	0	-
-1	0	-	0	-	0	-
Total (note b)	28	28	27	27	24	24

a/Each index uses HUD's six criteria. All 646 cities and urban counties are ranked by each index and contrasted with HUD's method of determining eligibility. The standardized scores of the following factors were used: POV = percent in poverty, AGE = age of housing, POP = population growth lag, INCG = per capita income growth lag, UNEMP = unemployment rate, JOBLAG = employment growth lag.

Index 1 = (3/20) X POV + (1/4) X AGE + (1/10) X POP + (1/6) X INCG + (1/6) X UNEMP + (1/6) X JOBLAG

Index 2 = (1/6) X POV + (1/6) X AGE + (1/6) X POP + (1/6) X INCG + (1/6) X UNEMP + (1/6) X JOBLAG

Index 3 = (2/7) X POV + (1/7) X AGE + (1/7) X POP + (1/7) X INCG + (1/7) X UNEMP + (1/7) X JOBLAG

b/The total of included equals the total of excluded because the top 333 cities in each index were contrasted with HUD's list of 333 eligible cities. The question of whether 333 is the appropriate number of eligibles is not considered here.

As shown in table 2, most eligibility changes would occur for those cities which are now barely eligible or ineligible. This indicates that while HUD's present system does a good job of classifying cities which are clearly eligible or ineligible, it does not discriminate well among those cities which are close to the margin. One reason for this is that a large number of cities have values which are clustered around the median. (See app. II.)

Cluster analysis

The previous table shows that the jurisdictions on the margin are more likely to be misclassified than jurisdictions with a high or low number of eligibility points. We used an alternative statistical method called cluster analysis to determine whether the 180 marginal jurisdictions (those with either two (91) or three (89) points) could be classified into two clusters. The analysis revealed that 48 communities would belong to one cluster and 128 communities to the other (four cities were not classified because of missing data elements). This analysis highlights how difficult it is to discriminate between the marginally eligible and ineligible cities.

CONCLUSIONS

HUD's present system of making eligibility determinations (based on a pass-fail method) is not sensitive to the severity of distress for the individual criteria, except for poverty. An alternative method of determining eligibility (which recognizes severity of distress and minimizes data limitations) would result in about 50 large cities having their eligibility status changed, most of which are now either marginally eligible or ineligible. Consequently, we believe that the UDAG eligibility process can be refined by taking into account severity of distress on the individual criteria. Such a change could also minimize the effects of data inaccuracies.

RECOMMENDATION

We recommend that the Secretary of HUD refine the UDAG eligibility process by utilizing a method which recognizes severity of distress for each of the criteria.

AGENCY COMMENTS

HUD officials told us that they agreed with this recommendation but plan to test several alternative eligibility processes which recognize severity of distress before implementing such a system.

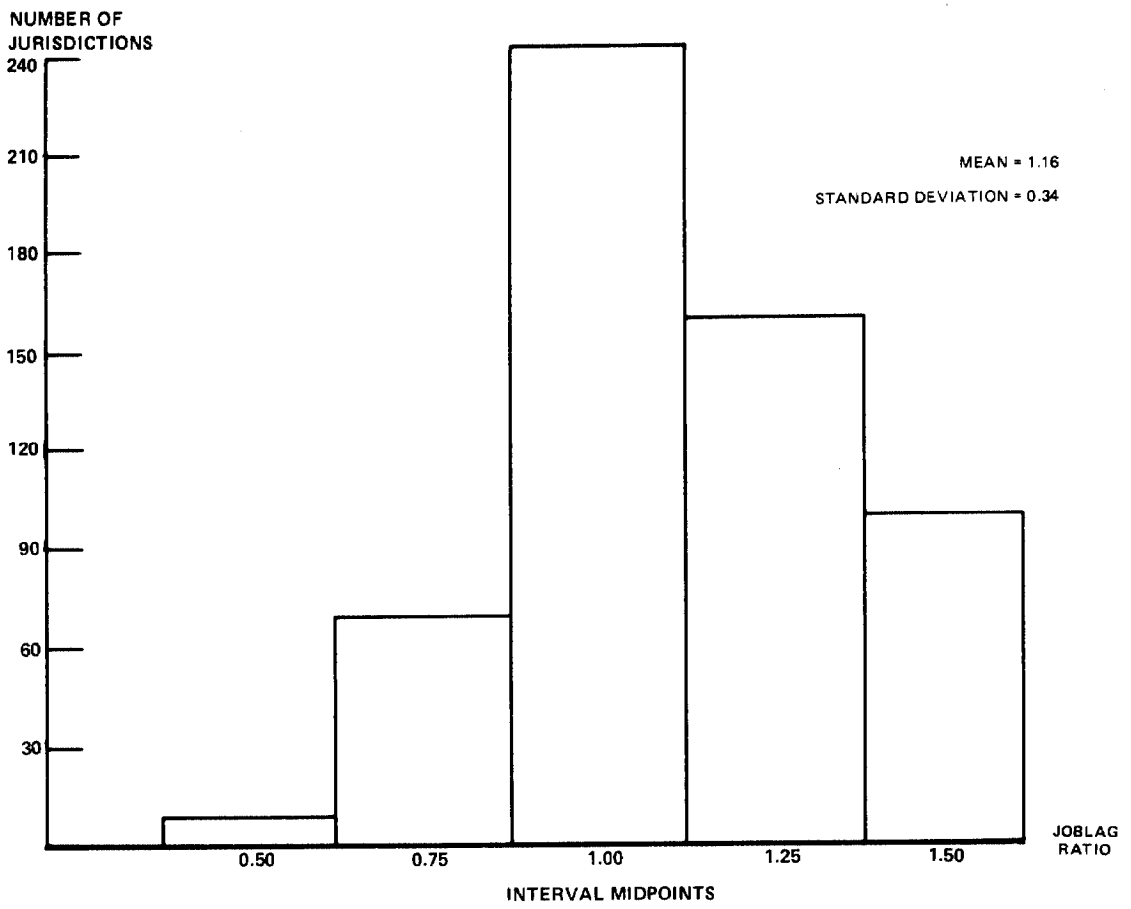
SPEARMAN RANK ORDER CORRELATION COEFFICIENT MATRIX FOR THE SIX ELIGIBILITY CRITERIA

Eligibility criteria	Percent in poverty	Age of housing	Population growth lag	Per capita income growth lag	Unemployment rate	Job lag
Percent in poverty	1	0.39	-0.41	-0.42	0.46	-0.19
Age of housing	0.39	1	-0.77	-0.30	0.24	-0.63
Population growth lag	-0.41	-0.77	1	0.26	-0.25	0.66
Per capita income growth lag	-0.42	-0.30	0.26	1	-0.47	0.21
Unemployment rate	0.46	0.24	-0.25	-0.47	1	-0.25
Job lag	-0.19	-0.63	0.66	0.21	-0.25	1

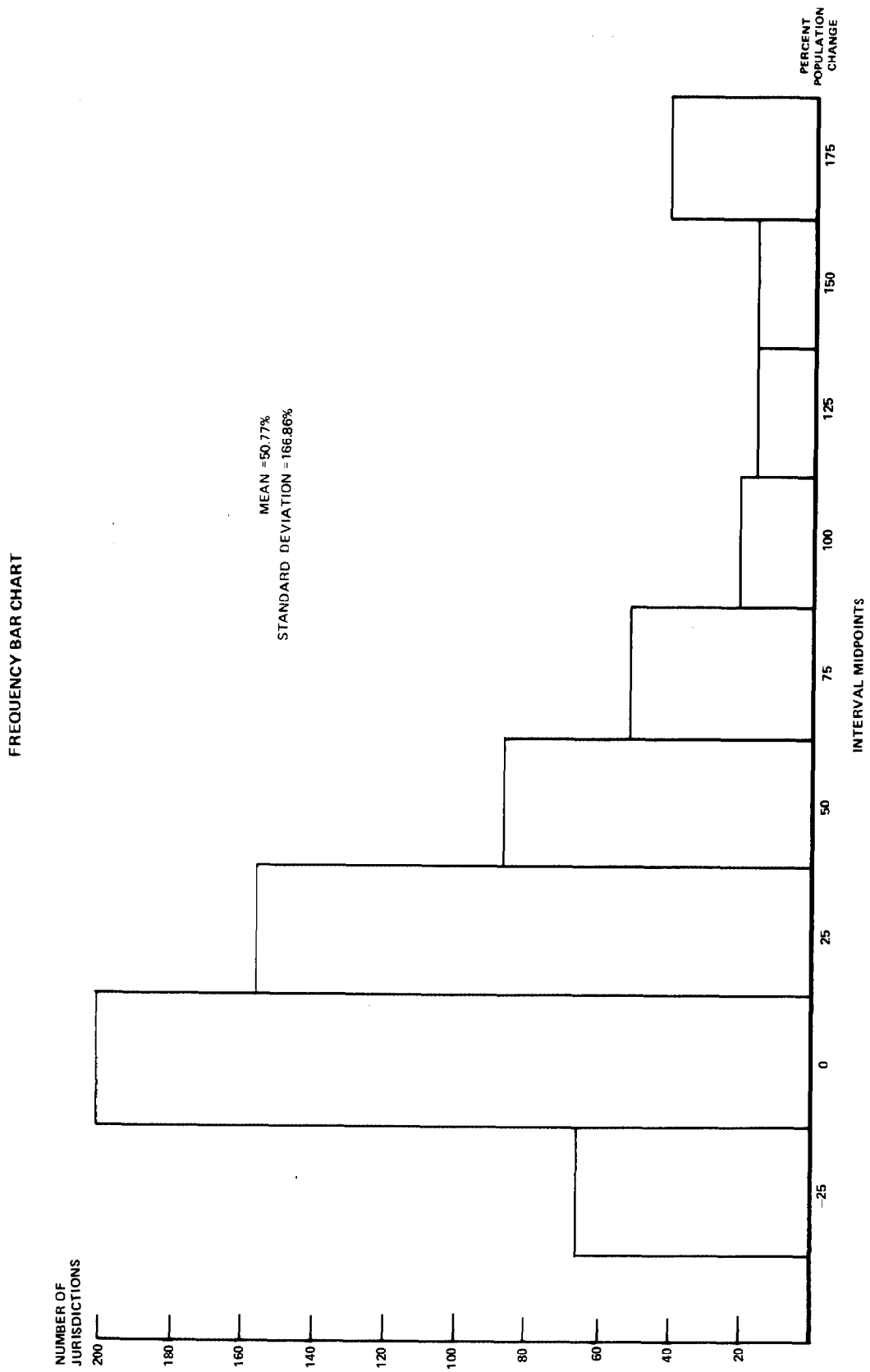
APPENDIX I

APPENDIX II

FREQUENCY BAR CHART

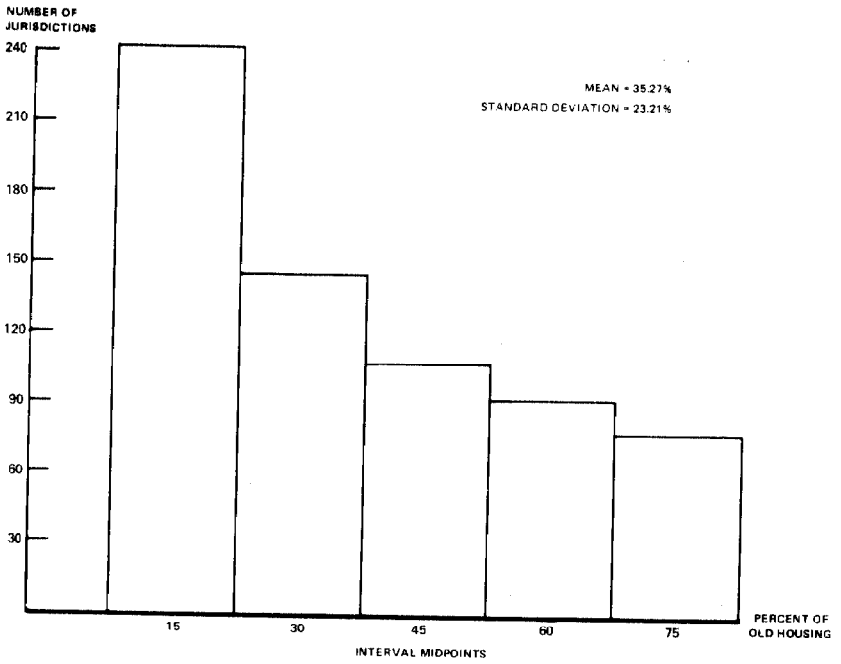


APPENDIX II


FREQUENCY BAR CHART
MEAN =50.77%
STANDARD DEVIATION =166.86%
NUMBER OF JURISDICTIONS
200
180
160
140
120
100
80
60
40
20
-25
0
25
50
75
100
125
150
175
INTERVAL MIDPOINTS
PERCENT POPULATION CHANGE

APPENDIX II

FREQUENCY BAR CHART



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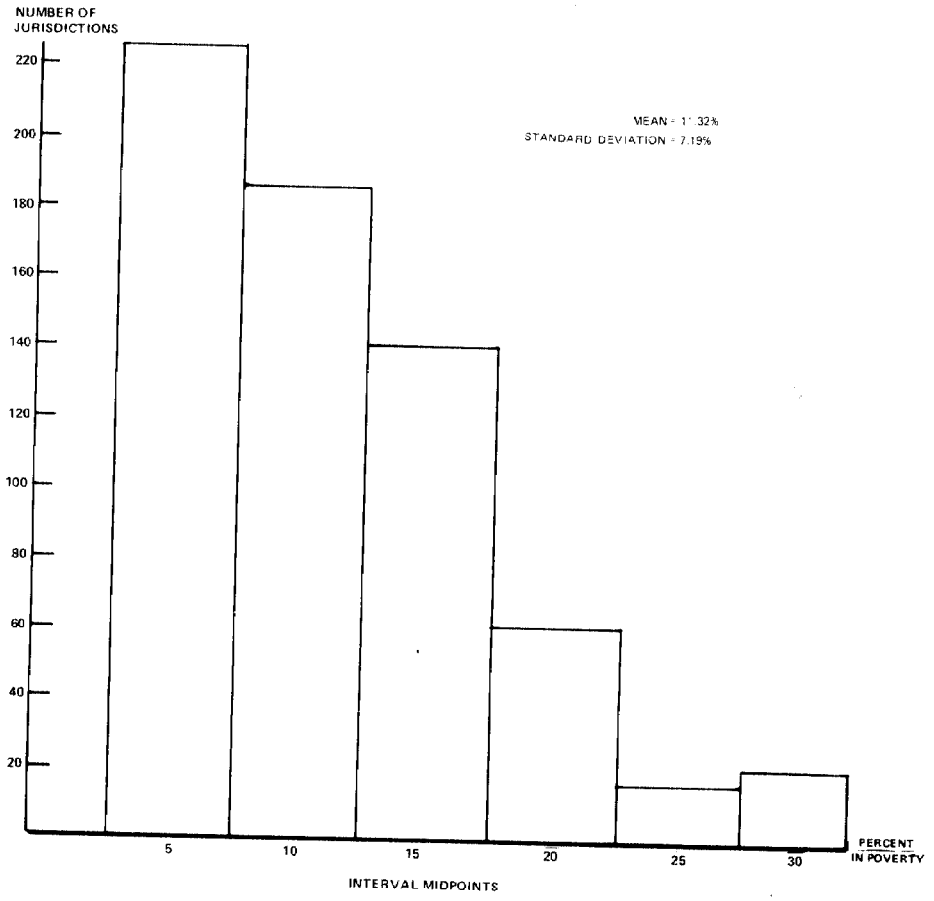
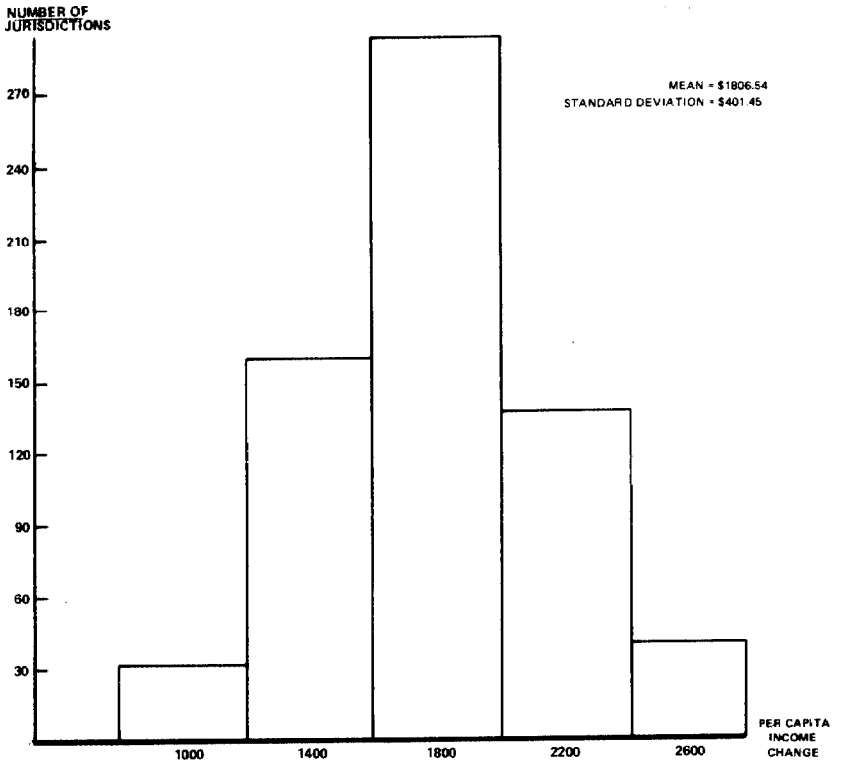


APPENDIX II

FREQUENCY BAR CHART



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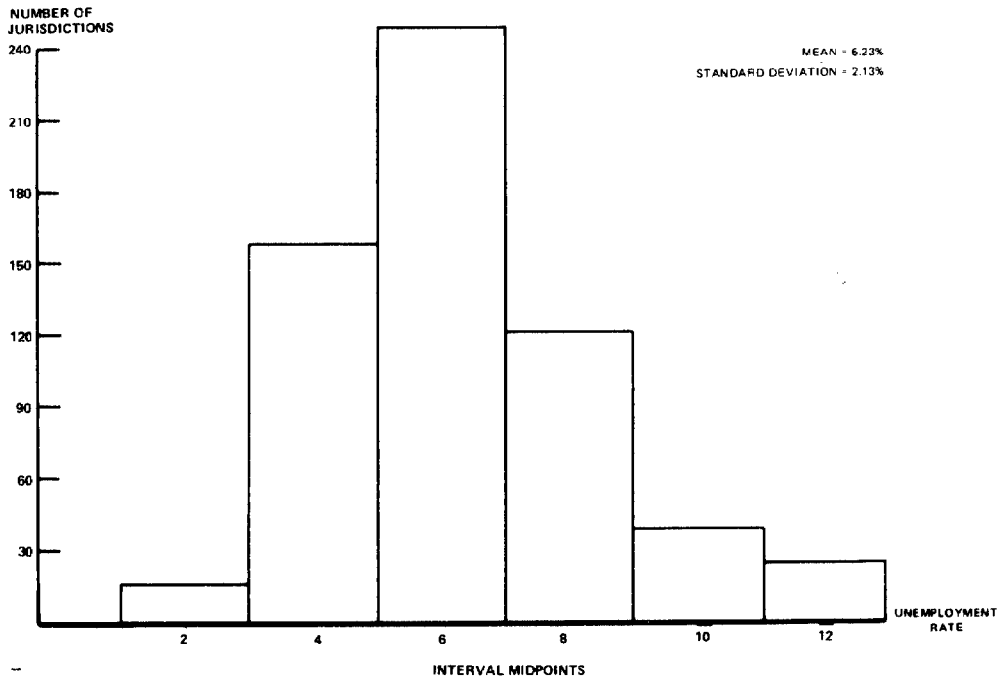

APPENDIX III

THE SECRETARY OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, D.C. 20410

MAR 14 1980

Mr. Elmer B. Staats
Comptroller General of
the United States
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Staats:

I am writing in reference to a Report recently prepared by the staff of the General Accounting Office entitled: "Criteria for Participation in the Urban Development Action Grant Program Should be Refined."

It is our intent to accept the recommendations of the report and test certain processes suggested by GAO. We also have a special contractor who is presently working on other alternative approaches which will be tested, and we will keep your staff informed of our progress.

I also wish to advise that the work by GAO staff on this Report is an outstanding example of the high standards of professionalism which GAO seeks to achieve. Your staff was completely thorough and objective in carrying out the assignment and explored numerous sources of data and information. While HUD and GAO staff at times did not agree there was always continued sharing of findings and ideas. Among other benefits from this give and take, we will be able to proceed in our testing more rapidly than would otherwise be possible. Most importantly, the cooperation and testing of ideas has resulted in a high degree of accuracy in the Report, itself.

We look forward to working with GAO in a similar manner on future reports for the mutual benefit of our respective agencies and clients.

Sincerely,

Moon Landrieu

(384770)

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