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FACTORS AFFECTING DECREASES IN CDBG ALLOCATIONS

This report combines a discussion of the impact of using American Community Survey data in the CDBG funding formula, and more importantly an analysis of the underlying factors that led to the drastic decrease in proposed funding to Miami-Dade County. Since the later analysis is critical to understanding the arguments that could be used to challenge the proposed allocations, it is presented first.

Analysis of Factors Affecting Decreases in CDBG Allocations

This serves as a follow-up to the report, prepared in December 2011 entitled *Impact of Introducing 2005-2009 ACS Data into the CDBG Formula for Grantees in Miami-Dade*. The report indicated that the County and two of its municipal entitlement areas were among the top ten losers nationwide in terms of the changes in CDBG funding allocation primarily due to the use of American Community Survey (ACS) 2005-2009 five year estimates for the overcrowding variable. Previously, the Census 2000 data that is significantly different was used. As noted in that report, the number of overcrowded housing units represents 25 percent of the funding formula, with population and poverty is weighted by 25 and 50 percent respectively. Although the use of the ACS data led to a 47.7 percent decrease in estimated level of overcrowding nationwide, the effects were felt disproportionately in Miami-Dade. Hialeah led the nation with a decrease of 85.5 percent in overcrowding, which in turn was the primary factor in a 41 percent decrease in new CDBG funding that also was the largest in the nation. A similar story was seen in Miami-Dade, city of Miami, Miami Beach and, to a lesser degree in North Miami. In the County overcrowding decreased by 75.0 percent and consequently there was a 27 percent decrease in the new grant amount. In the other three entitlement areas overcrowding declined by between 56.0 and 77.5 percent, while grant funding decreased by between 25 and 35 percent. It should be noted that changes in allocation in the HUD formula are on a relative basis. In the case of Miami-Dade the decrease in overcrowding was responsible for a decline of 50.6 percent in this component of the calculation of new grant amount.

Although persons per household (individuals living in occupied housing units) rose from 2.84 in the 2000 Census to 2.89 in the ACS 2005-2009 estimates, overcrowding defined as 1.01 persons per room or greater declined dramatically during this period. This seeming paradox was explained in the previous report, where it was seen that the decrease in overcrowding in Miami-Dade resulted from two factors. First, was the reporting of housing unit size where substantially fewer housing units with one or two units and a corresponding increase in those units with between four and six rooms. The other causative factor was the reported smaller household size. Although there were declines in both at the national, they were much less severe. Reported housing unit size was the primary factor. At the County level housing units with one and two bedrooms declined by 63.3 and 69.3 respectively, whereas in the nation the corresponding figures were 36.8 and 42.3 percent respectively. In the four to six room category there was actually an increase reported of about 50 percent in total for the County. At the national level the increase was less than five percent. This difference between the County and the nation drove the number of overcrowded units down sharply. In addition, the number of household in the one and two person increased in the County at a rate about double the figure for the nation. At the other end of the spectrum, five or more person households, there was a much larger decline in Miami-Dade than in the nation. For example, five person households in the County dropped by 20.3 percent, while this figure was dramatically lower in the nation, at 7.5 percent.

The question that emerges is what factors were behind the disproportionate decrease in overcrowding in the County and consequently on the new funding allocation. An analysis was done of entitlement areas, particularly with large decreases in their CDBG allocation and geographical concentration. In addition, some gainers and other large entitlement area were examined. The factor that most influenced the large decreases in overcrowding was the percent of foreign born persons. This was also true for linguistic isolation, although to a lesser extent. This, in turn, generally led to a substantial decrease in the new CDBG allocation. In the seven entitlement areas listed where, according to the 2000 Census, the percent foreign born is at least 50 percent, there was a decrease in grant allocation of at least 25 percent. The one exception was Santa Ana, California that actually displayed a 2.4 percent increase. This was the result of the poverty factor that is weighted 50 percent in the allocation formula. On the other hand one entitlement area, Horry County, South Carolina that had the lowest percent of foreign born, at four percent, showed the highest increase in CDBG allocation at 48.4 percent. Finally, the anomaly of Alexandria, Virginia that had a

large decrease in funding of 33.4 percent and a relatively low percent of foreign born, at 25.4 percent, can be explained primarily by the decrease in poverty on a relative basis.

There is clearly a geographic concentration of entitlement areas that had substantially reduced entitlements. They were clustered in southern California and Miami-Dade, areas with a high percentage of foreign born and with a continuous influx of immigrants. In fact, of the top 50 losers in terms of percentage decrease in CDBG allocation over half were either in the greater Los Angeles area or in South Florida. A total of 16 entitlement areas in this group were within 25 miles of Los Angeles, while the remainder were either in Miami-Dade or Broward counties. Based on the above, it would appear that the questions in the survey instrument and/or follow-up led to systematic bias in the reported levels of overcrowding in the ACS 2005-2009, at least in these areas.

There are two important types of nonsampling error that may have affected the overcrowding numbers in Miami-Dade, namely coverage and item nonresponse error. Coverage errors can result from not having an accurate address list from which the sample is drawn. The source used for the ACS is the Delivery Sequence file of the U.S. Post Office and the address list for Census 2000. It is important to note that in 2009 the County, through the 2010 Census Local Update of Census Addresses process, was able to get almost 80,000 addresses added to the Census 2010 address file. These addresses represented approximately 10 percent of all residential addresses. This meant that for the ACS 2005-2009 the universe of addresses was significantly understated, thus introducing coverage error. In addition, on a national basis overall coverage rates were much lower for Hispanics and Black Non-Hispanics than for White Non-Hispanics. The coverage rates for the ACS since 2005 have averaged 93 percent for Hispanics, 90 for Black Non-Hispanics and 95 percent rate for White Non-Hispanics. Given that 85 percent of County population is either Hispanic or Black Non-Hispanic, local coverage rates were most likely considerably lower than that for the nation.

The other type of nonsampling error is item nonresponse. This occurs when the survey questionnaire is submitted, but particular questions were not answered. Since the characteristics of the nonrespondents have not been observed, they may differ from those reported by the respondents. As a result, any imputation procedure using the respondent data may not reflect this difference. In regard to the housing question or item, that is used to calculate the overcrowding figure, namely number of rooms the percent allocation based on imputation was 5.3 percent for the five years for which data is available. This was the second highest rate of allocation for the 21 questions regarding the physical characteristics of housing.

The above suggests that nonsampling error may have introduced a bias into the calculation of overcrowding in the ACS 2005-20089 estimates. Therefore, it would appear prudent that if the FY 2012 CDBG funding allocations are similar to the ones in the HUD report, then a challenge to these figures should be considered.

Table 1: Characteristics of Select CDBG Entitlement Areas

State	Grantee	Period	Total Population	Percent Over-crowded Units	Speak English less than "very well" (Percent of Population 5 Years and Over)	Percent Linguistically isolated HHLDS	Percent Foreign Born	Change in Grant Amount	
CA	ALHAMBRA	2000	85,961	25.2%	41.88%	26.88%	50.8%	-30.8%	↓
		2005-2009	83,089*	7.9%	37.20%	24.90%	51.36%		
CA	CERRITOS	2000	51,507	11.2%	26.15%	13.25%	45.54%	-22.4%	↓
		2005-2009	49,041 *	3.3%	35.70%	14.10%	44.88%		
CA	GLENDALE	2000	195,047	23.7%	34.36%	20.16%	54.41%	-26.4%	↓
		2005-2009	191,719*	9.1%	32.00%	23.10%	50.61%		
CA	LOS ANGELES	2000	3,694,834	25.6%	32.62%	15.33%	40.9%	-8.6%	↓
		2005-2009	3,792,621 *	14.1%	30.3%	18.8%	39.5%		
CA	MONTEREY PARK	2000	59,933	24.6%	45.79%	30.58%	53.58%	-26.0%	↓
		2005-2009	60,269*	9.2%	43.60%	31.30%	52.66%		
CA	SANTA ANA	2000	337,512	50.3%	51.7%	27.28%	53.3%	2.4%	↑
		2005-2009	324,528*	32.1%	50.4%	28.5%	49.5%		
FL	HIALEAH	2000	226,411	30.6%	59.27%	45.53%	72.11%	-41.0%	↓
		2005-2009	224,669*	4.4%	61.86%	51.87%	71.37%		
FL	HOMESTEAD CITY	2000	32,046	28.6%	36.08%	25.24%	36.04%	16.0%	↑
		2005-2009	60,512*	8.42%	31.98%	25.33%	36.76%		
FL	MIAMI	2000	362,563	26.2%	47.12%	37.76%	59.50%	-25.8%	↓
		2005-2009	399,457*	5.9%	44.55%	37.87%	56.47%		
FL	MIAMI BEACH	2000	88,061	17.9%	35.21%	26.55%	55.48%	-35.2%	↓
		2005-2009	87,779*	6.23%	32.14%	26.82%	50.53%		
FL	MIAMI-DADE COUNTY	2000	2,253,362	20.01%	34.7%	23.99%	50.90%	-27.0%	↓
		2005-2009	2,496,435*	5.00%	34.7%	26.43%	49.50%		
FL	NORTH MIAMI	2000	60,036	27.9%	29.74%	18.71%	48.54%	-25.2%	↓
		2005-2009	58,786*	12.2%	31.63%	18.69%	47.80%		
SC	HORRY COUNTY	2000	196,629	2.9%	2.7%	1.2%	4.0%	48.4%	↑
		2005-2009	269,291 *	3.3%	3.9%	2%	6.24%		
VA	ALEXANDRIA	2000	128,283	8.3%	14.3%	6.9%	25.4%	-33.4%	↓
		2005-2009	139,966*	2.8%	13.3%	5.7%	23.9%		

*Total population in 2010.

Source: U.S. Census Bureau. Decennial Census 2000, Census 2010, and 2005-2009 American Community Survey 5-Year Estimates. Prepared by Planning Research Section, Sustainability, Planning and Economic Enhancement Department, Miami-Dade County, January 2012.

Impact of Introducing 2005-2009 ACS Data into the CDBG Formula for Grantees in Miami-Dade

The information about the number of persons per room is useful to housing policy, and is required or mandated by federal legislation concerning community development block grants, housing voucher allocations, and other housing grant programs.

For the CDBG program allocation to entitlement areas is based on one of two formulas. In the case of Miami-Dade, Formula A is used. The allocation is based on population, overcrowding and poverty, weighted 0.25, 0.25, and 0.5 respectively. Formula B that is more appropriate for older cities uses pre-1940 housing stock instead of overcrowding as a variable. The discussion below focuses on overcrowding as it is that factor that caused the large decrease in the FY 2012 CDBG allocation to the County.

Measuring Overcrowding

Data on the number of rooms in a housing unit was collected by every census since 1940. In combination with information about the number of persons residing in the unit, this item allows for living space estimates and for calculations of the number of persons per room in a particular dwelling.

With introduction of the American Community Survey (ACS), the estimates for a number of variables showed considerable differences with those in Census 2000, including the “year structure built” and “number of rooms” and “number of bedrooms”.

The questions about the number of room and number of bedrooms changes slightly as the questionnaire design improved overtime. The 2000 “room” question was similar to the corresponding question in the prior three censuses. It added “mobile home” to the “house or apartment” wording of the 1980 and 1990 censuses, which had differed from the “living quarters” wording of the 1970 item. Every census since 1960 has included an item on the number of bedrooms in a housing unit.

As a consequence of the fact that the 2012CDBG grant allocations will use ACS data for calculation of overcrowding instead of Census 2000 data, there will be direct implications for the CDBG grantees. More specifically, the use of ACS estimates for “overcrowded units” is expected to result in a decrease of the CDBG grant amounts for most grantees¹. It should be noted that for the County and its entitlement jurisdictions, HUD uses allocation Formula 1 that weights population at 25 percent, poverty at 50 percent, and overcrowding at 25 percent. The drastic decrease in overcrowding in the County is the factor that drives down the FY 2012 allocation.

¹Redistribution Effect of Introducing 2010 Census and 2005-2009 ACS data Into the CDBG Formula, U.S. Department of Housing and Urban development, Office of Policy Development and Research, 2011.

Differences in measures of overcrowding

The large differences between Census 2000 and ACS estimates were noted by analysts since the introduction of the ACS ten years ago and are subject of a numerous studies. Different methodologies for collecting data, sampling size and questionnaire design are among the explanations, studies by the U.S. Census Planning Research² and Household Statistics Division show³. U.S. Census researchers have specifically studied the inconsistencies between Census 2000 and ACS mail questionnaires for number of rooms and bedrooms⁴. The Census 2000 Reinterview Survey also indicated that the index of inconsistency was high (57.1) for bedrooms.

Changes are also noted between the earlier and more recent ACS estimates. Testing the two versions of rooms and bedrooms questions for different ACS datasets indicated that the 2008 ACS design for questions and response fields for Rooms and Bedrooms improves the under-reporting of total rooms compared to actual 2006 ACS and, while it does not affect the non response rate, it changes the distribution of bedrooms: the reporting of “0” bedrooms is higher and illustrates a shifting of “1-bedroom units” to “0-bedroom units”, and “2-room” to “1-room” units (i.e. resulting in lower overcrowding rates). Overall, the newer version of the ACS design reduced the under-reporting of rooms.

A Content Test was used to compare two versions rooms and bedrooms question set. The control version replicated the current ACS question.

The test version included the following changes to the question on total number of rooms:

- *Adding the word “separate” to the question stem.*
- *Adding the instruction that defines a “room.”*
- *Adding an instruction to include bedrooms and kitchens in the count of rooms.*
- *Modifying the exclusionary instruction by removing the “half-room” concept.*
- *Using an open-ended/write-in field rather than categories.*

The test version also included the similar following changes to the question on total number of bedrooms:

- *Adding language that explicitly links the total count of rooms and the count of bedrooms;*
- *Provide the heuristic/rule to use for defining a bedroom as part of the instruction.*
- *Providing instructions for efficiency/studio apartments;*
- *Using an open-ended/write-in field rather than categories.*

Given the importance of the CDBG funding for the implementation of housing and development policies in Miami-Dade and the potential loss of grant dollars due to use of ACS 2005-2009 data by HUD Community Planning Development, it is crucial to understand the changes in overcrowding at local level. If used as measures for different

² Census 2000 Sample Data and ACS 3-year Averages Quality Measures Comparison Documentation, U.S. Census Bureau, Planning Research, and Evaluation Division, 2003.

³ Evaluation Report Covering Room and Bedrooms, U.S. Census Bureau, Housing and Household Economic Statistics Division, 2007.

periods, the Census 2000 and the ACS 2005-09 data imply that the overcrowding in the County dropped from 20 percent, in 2000, to an average of 5 percent in the period 2005-2009.

Table 2
Overcrowded Units, Miami-Dade County, FL

	Total Occupied Units	Overcrowded Subtotal	Total Occupied Units	Overcrowded Subtotal
	<u>Census 2000</u>		<u>ACS2005-09</u>	
Number	776,774	155,432	827,931	41,590
Percent	100.00%	20.01%	100.00%	5.00%

Source: US. Census Bureau, Census 2000 and American Community Survey 2005-09 5-Year Estimates.

Further, we found that, the higher the level of geographic disaggregation, the larger the magnitude of the drop in estimated overcrowding. Comparing the overcrowded housing units reported by the Decennial Census 2000 to those based on the ACS 2005-09 5-Year average estimates for the CDBG eligible cities in Miami-Dade we see even more notable differences. The overcrowding, as measured by the ACS 2005-2009 estimates is much lower than the figures derived from the Census 2000.

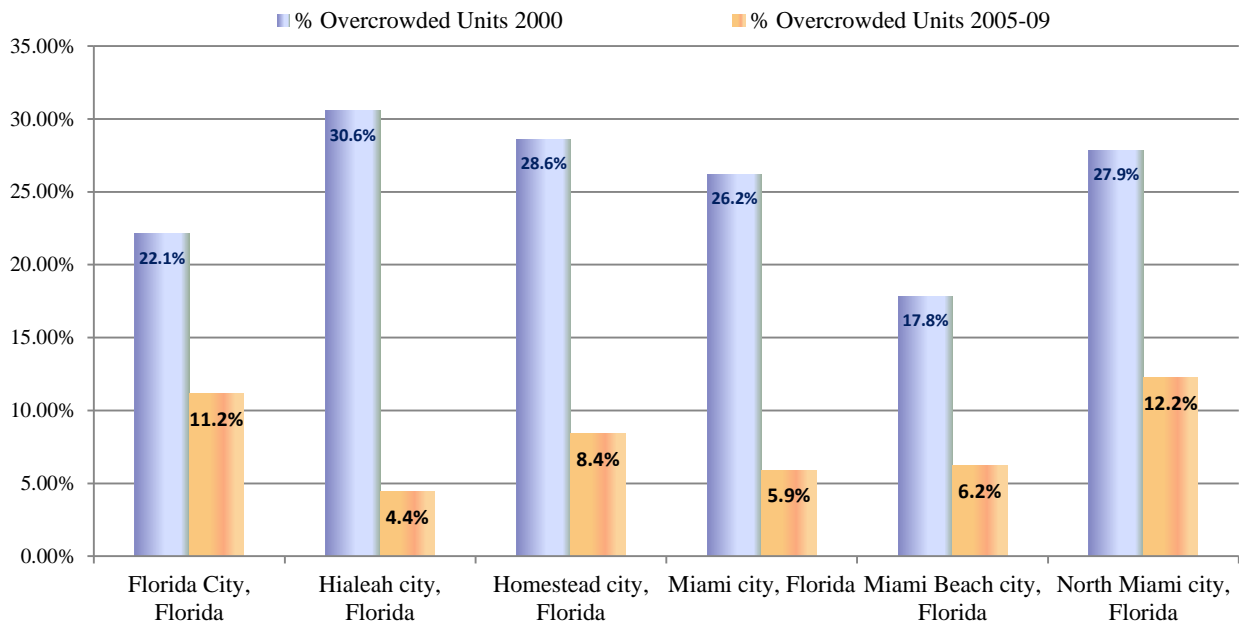
Table 3.

	<u>Census 2000</u>			<u>ACS 2005-2009 5-Year Estimates</u>		
	Total Occupied housing units	Overcrowded Units	Overcrowded (Percent of Total)	Total Occupied housing units	Overcrowded Units	Overcrowded (Percent of Total)
Florida City, FL	2,189	484	22.11%	2,709	303	11.18%
Hialeah city, FL	70,763	21,638	30.58%	71,526	3,169	4.43%
Homestead city, Florida	10,065	2,881	28.62%	17,239	1,451	8.42%
Miami city, FL	134,359	35,236	26.23%	158,236	9,357	5.91%
Miami Beach city, FL	46,220	8,249	17.85%	44,593	2,779	6.23%
North Miami city, FL	20,520	5,717	27.86%	18,278	2,238	12.24%

Source: US. Census Bureau, Census 2000 and American Community Survey 2005-09 5-Year Estimates.

Consequently, introducing the ACS data as a measure for overcrowding is likely to affect the calculation of grant amounts for all CDBG grantees in Miami-Dade resulting in a sizable reduction, as shown in the HUD report mentioned before.

**Chart 1.
Overcrowded Units by CDBG Grantee in Miami-Dade County**



Source: U.S. Census Bureau, Decennial Census 2000 and American Community Survey 5-year Averages.

Comparative Analysis of Determinants of Overcrowding

The following analysis compares changes for Miami-Dade and the U.S. in household size and unit size, two factors that strongly influence the changes in overcrowding between the 2000 Census and the 2005-2009 ACS five year estimates. The data shows that while due to use of the ACS instead of the decennial census data that overcrowding decreased 47.7 percent in the U.S., while the comparable figure for the County was 74.9 percent. A difference of this magnitude is difficult to explain. Examination of household size sheds some light on the large differences in overcrowding. One and two person households in Miami-Dade increased much more rapidly than the corresponding figure at the national level, while five person households and above decreased much more rapidly in the County compared to the nation. The household size trends need to be coupled with the data on housing unit size to understand the full picture. While unit size decreased significantly at the one and two room level, the figures for the County were considerably lower. In both cases, there was approximately a 27 percentage point larger decrease than at the national level. At the same time, there were very large increases in four to six room housing units in Miami-Dade compared to the national figures. For example, housing units with four rooms increased by 55.4 percent in the County, while the corresponding figure for the nation was 6.6 percent. Differences of this magnitude for both household size and housing unit size are statistically improbable.

**Table 4.
Percent Change in Overcrowding,
2000 Census Compared with 2005-09 ACS**

	Miami-Dade (% Change)	U.S. (% Change)
Overcrowded Units	-74.9	-47.7
Owner Occupied	-77.67	-47.4
Renter Occupied	-72.96	-47.0
Household size (mean)	1.76	0.4
1-person household	11.48	5.9
2-person household	7.40	2.3
3-person household	0.09	-3.7
4-person household	-3.09	-4.0
5-person household	-20.32	-7.5
6-person household	-35.67	-11.0
7-or-more-person household	-41.03	-18.4
Unit size (median rooms)	17.95	1.9
1 room	-63.29	-36.8
2 rooms	-69.34	-42.3
3 rooms	-14.93	-7.9
4 rooms	55.37	6.6
5 rooms	47.83	1.7
6 rooms	27.34	1.3
7 rooms	9.77	2.6
8 rooms	-0.14	2.5
9 or more rooms	-1.12	18.9

Source: U.S. Census Bureau, Decennial Census 2000 and American Community Survey 5-year Averages.

Chart 2.
Percent Change in Household Size, 2000 to 2005-2009, by Area

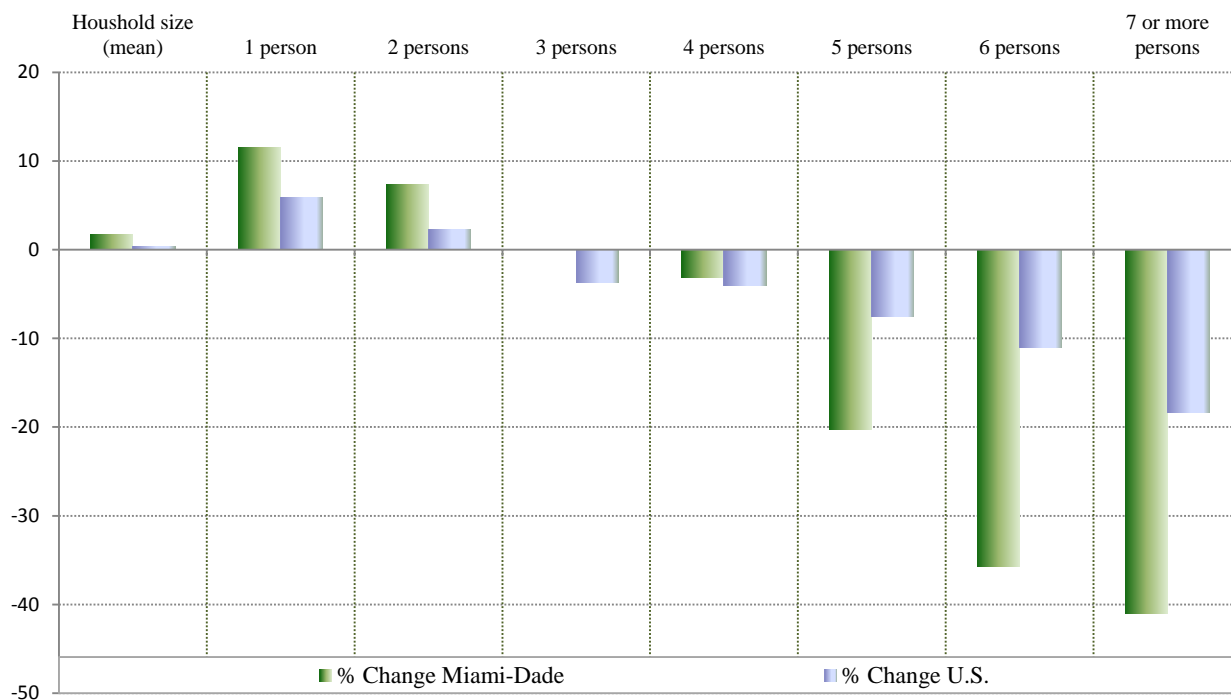
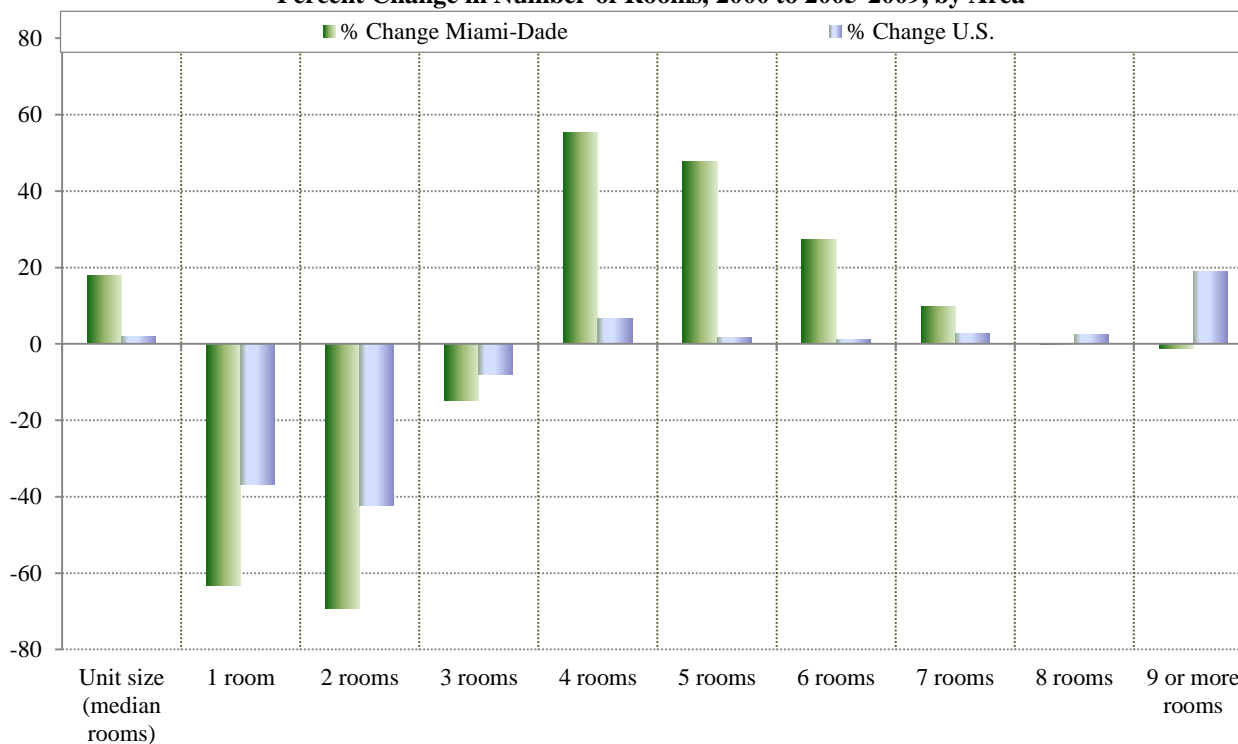


Chart 3.
Percent Change in Number of Rooms, 2000 to 2005-2009, by Area



Summary

While the effect of introducing the ACS data in the CBDG formula should be expected to be felt fairly evenly across the board, the County and municipal entitlement areas located within Miami-Dade are on the list of top losers of federal funding, disproportionately to other entitlement areas with comparable demographic characteristics. In fact, of the top ten losers, in percentage terms, amongst all entitlement communities nationwide three are within the County. Further, of the 43 entitlement communities that lost 20 percent or more in their FY 2012 allocation, five were within the County. With these considerations in mind, it certainly appears that the ACS five year average estimates are not a good measure of overcrowding in Miami-Dade.

The comparative analysis of household size and rooms per housing unit between Miami-Dade and the U.S. shows divergences of the County figures from the nation that are statistically highly unlikely. As these variables influence the magnitude of the overcrowding factor, this, in turn, leads to the disproportionate results between the County and nation regarding overcrowding.

An additional step that needs to be taken to understand this situation is to examine the characteristics of the entitlement communities that lost 20 percent or more in FY2012 funding for common features that pertain to socio-economic and geographic factors, as well as dissimilarities from those that gained 20 percent or more in their allocation. Depending on the results of this analysis, additional steps will be taken to provide an explanation of the highly unlikely severe drop in overcrowded units that gives rise to the substantial decrease in funding.