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MEMORANDUM FOR ACS Research and Evaluation Advisory Group

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Subject: 2015 Envelope Mandatory Messaging Test  
Preliminary Report

Attached is the preliminary American Community Survey Research and Evaluation report “2015 Envelope Mandatory Messaging Test.” This report summarizes the preliminary results of research into the effect of the removal of the mandatory message “YOUR RESPONSE IS REQUIRED BY LAW” from the envelopes for the initial mailing and paper questionnaire packages on return rates.

Feedback from stakeholders and respondents has raised concerns about the prominent references to the mandatory participation in the American Community Survey (ACS). In order to be responsive to these concerns we conducted this test. The results of this test show that eliminating the phrase “**YOUR RESPONSE IS REQUIRED BY LAW**” from the initial mail package envelope and the paper questionnaire package envelope does significantly lower the self-response return rate by 5.4 percentage points. This rate is before the start of computer-assisted telephone interviewing and it pushes additional cases into the more expensive follow-up modes. We estimate the preliminary cost impact of eliminating mandatory messages from the envelopes in the manner we tested to be an increase in the annual costs of the survey by roughly \$9.5 million. This estimate will be refined for the final report. The final report will also provide additional analysis on the impact to hard-to-count populations and the impact on ACS estimates.

It is important to recognize that this test is just the first step in our research to examine the impact of modifying the mandatory messages contained in the ACS mail materials. Additional testing that is being conducted in connection with the September 2015 ACS sample will provide important insights on ways to revise the mandatory messages in a more comprehensive manner throughout the various mail pieces, and other messaging and design enhancements to continue to be responsive to the feedback from stakeholders and respondents while preserving the quality of the survey.

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#### Attachment

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# 2015 Envelope Mandatory Messaging Test

PRELIMINARY REPORT

## Table of Contents

List of Tables .....	ii
Executive Summary .....	iii
1. Introduction.....	1
2. Methodology .....	1
2.1. Experimental Design.....	1
2.2. Sample Design .....	2
2.3. ACS Operational Schedule for the May 2015 Panel .....	2
2.4. Research Question .....	3
2.5. Analysis.....	3
2.5.1 Self-Response Return Rates .....	3
2.5.2 Final Response Rates .....	4
2.5.3. Universe Eligibility and Response Criteria .....	5
2.5.4. Calculation of Weighted Rates and Differences between Treatments.....	7
2.5.5. Calculation of Standard Errors.....	7
3. Assumptions and Limitations .....	8
3.1. Assumptions.....	8
3.2. Limitations .....	8
4. Results.....	8
5. Conclusion .....	10
6. References.....	11
Attachment A – ACS Production Envelopes .....	12
Attachment B – ACS Test Treatment Envelopes .....	13

## List of Tables

Table 1: ACS Mailouts for the May 2015 Panel.....	3
Table 2: Self-Response Return Rate Results by Mode at Selected Points in the Data Collection Cycle For all mailable and deliverable sample addresses .....	9
Table 3: Self-Response Return Rate Results by Mode before CATI For all sample addresses mailed the paper questionnaire .....	10
Table 4: Final Response Rates and Response Distributions by Mode after CAPI For all sample addresses in the Self-Response, CATI, and CAPI universes.....	10

## Executive Summary

The current design of the American Community Survey (ACS), with a sample of roughly 3.5 million housing unit addresses, allows the Census Bureau to collect and update demographic, social, economic, and housing data for the United States every year. These data are essentially the same as the “long-form” data that the Census Bureau traditionally collected once a decade from a sample of housing units as part of the decennial census. Because it is part of the decennial census, response to the ACS is mandatory.

Previous studies have indicated that the use of mandatory language on envelopes for ACS mailouts produces higher response rates than envelopes without the use of such language (Dillman et al., 1996; Dillman 2000). In addition, recent studies conducted on behalf of the Census Bureau suggested that the “required by law” message in the mailing package may be the single most effective message in attracting attention and motivating response (Reingold, 2014). The ACS sends up to six mailings to sampled addresses, and most of those materials contain language referring to the mandatory nature of the survey. The envelopes that contain the initial mail package and paper questionnaire package both display the following message in bold text, **“YOUR RESPONSE IS REQUIRED BY LAW.”**

Feedback from stakeholders and respondents has raised concerns about the prominent references to the mandatory participation in the ACS. In order to be responsive to these concerns, we conducted the 2015 Envelope Mandatory Messaging Test. The purpose of the test was to evaluate the impact on self-response of removing the phrase **“YOUR RESPONSE IS REQUIRED BY LAW”** from the envelopes used to mail the initial mail package as well as the paper questionnaire package. Materials within these packages, as well as other materials sent to sampled addresses, were not changed for this test. A test in September 2015 will focus on modifications to mail materials to soften the mandatory messages while emphasizing the benefits of participation in the survey.

### Methodology

Addresses in the May 2015 ACS sample panel were randomly assigned to one of 24 representative groups of approximately 12,000 addresses each. We randomly selected two of these groups (~24,000 addresses) for the experimental treatment (Test Group) where the mandatory language was removed from the mail envelopes. Two additional groups served as our Control Sort Group which received the same mail materials as production (envelopes with the mandatory language still included), but were sorted separately from the Test Group and the rest of production to ensure that the mail delivery time was as close as possible to the Test Group mail delivery time. The remaining 20 groups received production materials and were sorted as usual.

For our analysis we calculated two types of rates: return rates and response rates. Return rates were calculated for the self-response mode of the survey. Final response rates were calculated after all modes of data collection were complete. Part of our analysis is to show what would most likely occur if the tested changes were implemented in a full ACS data collection cycle with respect to mail volume and possible work loads after of the mailout phase. Because out-of-

scope addresses are not discovered until after the mailout phase of data collection, we did not exclude them from the self-response return rates. Through computer-assisted telephone and personal interviews, we can confirm out-of-scope addresses. Thus, these cases are excluded from the final response rate calculations.

We calculated self-response return rates at certain points in the mailout phase before the interview operations began. We calculated final response rates at the end of all data collection modes. For each calculation, we compared rates between the Test Group and the Control Sort Group. For each comparison, we used a two-tailed hypothesis test to measure whether the difference between the two groups was statistically significant or not.

### Research Question and Results

*What is the impact on response of removing the message “YOUR RESPONSE IS REQUIRED BY LAW” from the two mailing envelopes for the initial and paper questionnaire packages?*

For all mailable and deliverable sample addresses, before the computer-assisted telephone interview operation began, the total self-response return rates were:

Control Sort: 42.5 percent (standard error = 0.5)  
Test Group: 37.1 percent (standard error = 0.4)  
Difference: 5.4 percentage points (standard error = 0.5)  
Statistically significant at the  $\alpha = 0.1$  level.

For all mailable and deliverable sample addresses mailed the paper questionnaire package, before the computer assisted telephone interview operation began, the total self-response return rates were:

Control Sort: 26.2 percent (standard error = 0.4)  
Test Group: 23.0 percent (standard error = 0.3)  
Difference: 3.2 percentage points (standard error = 0.4)  
Statistically significant at the  $\alpha = 0.1$  level.

For all addresses in the self-response, computer assisted telephone interview, and computer assisted personal interview universes, at the end of all data collection, the final response rates were:

Control Sort: 96.3 percent (standard error = 0.2)  
Test Group: 95.6 percent (standard error = 0.2)  
Difference: 0.7 percentage points (standard error = 0.3)  
Statistically significant at the  $\alpha = 0.1$  level.

Because the primary selection criteria for multiple responses for this test vary slightly from the criteria used in production, the final response rates may not exactly match official ACS production final response rates.

## Conclusion

The results of this test show that eliminating the phrase “**YOUR RESPONSE IS REQUIRED BY LAW**” from the initial mail package envelope and the paper questionnaire package envelope does significantly lower the self-response return rate by 5.4 percentage points, before the start of computer-assisted telephone interviews. After telephone and personal interviews, the final response rate among self-respondents in the Test Group was significantly lower than the Control Sort Group rate by 5.4 percentage points; the overall final response rate was significantly lower in the Test Group by 0.7 percentage points.

We are still evaluating the relative cost impact of the reduction in self-response returns as well as possible ways to mitigate those impacts. As context using Fiscal Year 2015 budget information, the cost per case in the workload for the personal visit operation is roughly 15 times as expensive per case compared to mail and Internet. Therefore, methodological changes that reduce self-response and increase workloads in follow-up operations have significant cost impacts. Our preliminary estimate of the cost impact of eliminating mandatory messages from the envelopes in the manner we tested shows an increase in the annual costs of the survey by roughly \$9.5 million. This estimate will be refined for the final report. Additionally, methods that reduce self-response consequently increase the total number of contacts from the Census Bureau that respondents would receive by including them in the telephone or personal visit operations. Therefore, the perceived increase in burden for the respondent must be considered.

Further analysis of this test, including assessing the impact on hard-to-count populations, the impact on ACS estimates, and the relative cost impact, is ongoing. These will be among the topics discussed in the final report. This test is just the first step in our research to examine the impact of modifying the mandatory messages contained in the ACS mail materials. Additional testing that is being conducted in connection with the September 2015 ACS sample will provide important insights on ways to revise the mandatory messages in a more comprehensive manner throughout the various mail pieces, and other messaging and design enhancements to continue to be responsive to the feedback from stakeholders and respondents while preserving the quality of the survey.

## 1. Introduction

The American Community Survey (ACS) data provide a wealth of information. Government officials rely on the data to make informed decisions on matters of public interest such as access to emergency services, public transportation, education, medical needs, and much more. Moreover, businesses in the private sector use the data to determine business risks and opportunities. However, the data are only as good as the information we collect from sampled addresses.

The current design of the ACS, with a sample of roughly 3.5 million housing unit addresses, allows the Census Bureau to collect and update demographic, social, economic, and housing data for the United States every year. These data are essentially the same as the “long-form” data that the Census Bureau traditionally collected once a decade from a sample of housing units as part of the decennial census. Because it is part of the decennial census, response to the ACS is mandatory.

Previous studies indicated that the use of mandatory language on envelopes for ACS mailouts produces higher response rates over envelopes without the use of such language (Dillman et al., 1996; Dillman 2000). In addition, recent studies conducted on behalf of the Census Bureau suggested that the “required by law” message in the mailing package may be the single most effective message in attracting attention and motivating response (Reingold, 2014). The ACS sends up to six mailings to sampled addresses, and most of those materials contain language referring to the mandatory nature of the survey (See Table 1, Sec. 2.3). The envelopes that contain the initial mail package and paper questionnaire package also include mandatory language. Both envelopes display the following message in bold text, “**YOUR RESPONSE IS REQUIRED BY LAW**” (Attachment A).

Feedback from stakeholders and respondents has raised concerns about the prominent references to the mandatory participation in the ACS. In order to be responsive to these concerns with the prominence of the mandatory message on the envelopes, we conducted the 2015 Envelope Mandatory Messaging Test.

The purpose of the Envelope Mandatory Messaging Test was to study the impact on self-response of removing the phrase “**YOUR RESPONSE IS REQUIRED BY LAW**” from the envelopes used to mail the initial mail package and the paper questionnaire package (Attachment B). Materials within these packages as well as other materials sent to sampled addresses were not changed for this test. A test in September 2015 will focus on modifications to mail materials to soften the mandatory messages while emphasizing the benefits of participation in the survey.

## 2. Methodology

### 2.1. Experimental Design

For the experimental treatment, the mandatory language was removed from the envelopes used to mail the initial mail package and the paper questionnaire package. We will refer to the experimental treatment group as the Test Group. The control treatment received the same mail materials as production (envelopes with the mandatory language still included), but were sorted



separately from the Test Group and the rest of production to ensure that the mail delivery time was as close as possible to the Test Group mail delivery time. We will refer to this group as the Control Sort Group.<sup>1</sup>

For our analysis we calculated two types of rates: return rates<sup>2</sup> and response rates. Return rates were calculated for the self-response mode of the survey. Final response rates were calculated after all modes of data collection were complete. Part of our analysis is to show what would most likely occur if the tested changes were implemented in a full ACS data collection cycle with respect to mail volume and possible work loads after the completion of the mailout phase. Because most out-of-scope addresses are not discovered until the personal visit stage of data collection, we did not exclude them from the self-response return rates. However, out-of-scope addresses are excluded from the final response rate calculations.

We calculated self-response return rates for all mailable addresses in our survey and among only those that were mailed the paper questionnaire package. After the Computer-Assisted Personal Interview (CAPI) operation was complete, we calculated the final response rate that included self-responses, Computer-Assisted Telephone Interview (CATI) responses, and CAPI responses.<sup>3</sup> For each calculation, we compared rates between the Test Group and the Control Sort Group. For each comparison, we used a two-tailed test so that we could measure the impact in either direction.

## **2.2. Sample Design**

The ACS sample design consists of dividing the monthly sample panel into 24 Methods Panel Groups of approximately 12,000 addresses each. Each group is a representative subsample of the entire annual sample. Each Methods Panel Group within a monthly sample is representative of the entire monthly sample panel, and each monthly sample is representative of the country. We chose two Methods Panel Groups each for our Control Sort and Test Group treatments because we also wanted to test mail delivery timing issues. The remaining 20 Methods Panel Groups received production materials and were sorted as usual. There are approximately 24,000 addresses in the Test Group, approximately 24,000 addresses in the Control Sort Group, and approximately 240,000 addresses in the rest of production.

## **2.3. ACS Operational Schedule for the May 2015 Panel**

Each monthly ACS sample panel consists of three main data collection operations: a six-week mailout period, a one-month CATI period, and a one-month CAPI period.

The May 2015 panel mailout period was from April 23, 2015 to June 4, 2015. The ACS has six mailouts associated with each sample panel. For the May 2015 panel, Table 1 shows the date of each mailout and briefly describes its contents and purpose. Materials marked with a single

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<sup>1</sup> We have found in past tests that the Postal Service treats mailings differently based on the number of mailing pieces, so we created the Control Sort Group, which is the same size as the Test Group, to control for that.

<sup>2</sup> Return rates in this report are referred to as “check-in” rates in the research and evaluation analysis plan for this test.

<sup>3</sup> Even though the mailout period lasts only one month, mail and Internet responses are accepted until the end of the CAPI month.

asterisk (\*) include language related to the mandatory nature of the survey. Items marked with two asterisks (\*\*) were the mailings where the message “**YOUR RESPONSE IS REQUIRED BY LAW**” was removed from the front of the envelope for the Test Group.

**Table 1: ACS Mailouts for the May 2015 Panel**

<b>Mailout</b>	<b>Description of Materials</b>	<b>Mailout Date</b>
Pre-Notice Letter	Letter informs housing unit they are in ACS, and tells them to expect a request to participate in a few days. Also contains a Multi-Lingual Informational Brochure*.	April 23, 2015
Initial Mailing Package **	Introduction Letter*, Frequently Asked Questions Brochure*, and Internet Instruction Card. This mailing urges housing units to respond via the Internet.	April 27, 2015
First Reminder Postcard	A reminder postcard sent to all addresses that received the previous two mailings.	April 30, 2015
Paper Questionnaire Package **	Sent to addresses that have not responded via the Internet. Introduction Letter*, Paper Questionnaire, Return Envelope, Internet Instruction Card, FAQ Brochure*, and Instruction Guide*.	May 14, 2015
Second Reminder Postcard	A reminder postcard* sent to all addresses that were also sent the Paper Questionnaire Package.	May 18, 2015
Additional Postcard	An additional reminder postcard* sent to addresses that have not yet responded and are ineligible for CATI follow-up.	June 4, 2015

The May 2015 panel CATI universe was created on May 25, 2015 and the CATI operation was conducted June 1-30, 2015. The May 2015 panel CAPI universe was created on June 29, 2015 and the CAPI operation was conducted July 1-31, 2015.

## **2.4. Research Question**

The research question addressed in this preliminary report is, “What is the impact on response of removing the message “**YOUR RESPONSE IS REQUIRED BY LAW**” from the two mailing envelopes for the initial and paper questionnaire packages?”

## **2.5. Analysis**

### **2.5.1. Self-Response Return Rates**

We evaluated the impact of removing the mandatory message by calculating self-response return rates overall and by mode. Self-response return rates were calculated at the following points in the data collection cycle: prior to the First Reminder Postcard mailing, prior to the Paper Questionnaire Package mailing, and prior to the CATI operation.

Two different mailings were affected by this test. For the first set of self-response return rates, the universe includes all mailable and deliverable sample addresses because the initial mailing

package was sent to these addresses. For the second set of self-response return rates, the universe includes all mailable and deliverable sample addresses that had not responded to the survey prior to the mailing of the paper questionnaire package. Only these addresses would have received the paper questionnaire package. From both of these universes, we removed addresses where the initial mail package or the paper questionnaire package was returned by the United States Postal Service (USPS) as Undeliverable as Addressed (UAA) and a response was not received. We compared the rates between the Test Group and the Control Sort Group. For each comparison, we used a two-tailed test so that we could measure the impact in either direction.

All self-response return rate comparisons were also broken out by mode (Internet and mail), and were calculated using the following formulas:

$$\text{Self-Response Return Rate}^4 = \frac{\text{\# of mailable and deliverable sample addresses that provided a non-blank}^5 \text{ return by mail, Telephone Questionnaire Assistance (TQA), or a complete or sufficient partial response by Internet}}{\text{Total \# of mailable and deliverable sample addresses}^6} * 100$$

$$\text{Internet Return Rate} = \frac{\text{\# of mailable and deliverable sample addresses that provided a complete or sufficient partial Internet response}}{\text{Total \# of mailable and deliverable sample addresses}^6} * 100$$

$$\text{Mail Return Rate} = \frac{\text{\# of mailable and deliverable sample addresses that provided a non-blank}^5 \text{ return by mail or TQA}}{\text{Total \# of mailable and deliverable sample addresses}^6} * 100$$

### 2.5.2. Final Response Rates

At the end of all data collection, we calculated a final response rate by combining the self-responses, CATI responses, and CAPI responses. These rates were calculated for the total number of sample addresses in the final response universe (described below). We compared the rates between the Test Group and the Control Sort Group. For each comparison, we used a two-tailed test so that we could measure the impact in either direction.

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<sup>4</sup> Return rates in this report are referred to as “check-in” rates in the research and evaluation analysis plan for this test.

<sup>5</sup> A blank form is a form in which there are no data defined-persons and the telephone number listed on the form by respondents is blank.

<sup>6</sup> We removed addresses where the initial mail package or paper questionnaire package was returned by the USPS as UAA and a response was not received. For the second set of rates the universe only includes sample addresses sent the paper questionnaire package.

### **2.5.3. Universe Eligibility and Response Criteria**

#### *Self-Response Universe Eligibility (Internet and Mail)*

For the self-response modes (Internet and Mail), we excluded addresses designated as “undeliverable” (UAA) by the post office, unless we received a response. We also excluded addresses in remote Alaska and Puerto Rico. All addresses not excluded by one of these criteria we counted as eligible for both the Internet and Mail modes.

#### *Response Criteria for Internet*

We counted a case as an Internet mode response if the address was in the self-response universe and one of the following conditions was satisfied:

- There was a complete Internet response.
- There was a sufficient partial Internet response. That is, the respondent viewed all basic demographic questions for all people in the household, all questions about the housing unit, and at least the first detailed question for one person and provided some data.
- The unit is suspected to be vacant, based on the Internet response received, but has not been confirmed.
- The unit is suspected to be a business—which would make it out of scope for the survey—but this has not been confirmed. The unit could still be found to be in scope via follow-up, and someone did submit a response; so, for the point in time at which we are calculating the rate, we consider this a valid Internet response.

#### *Response Criteria for Mail*

We counted a case as a mail mode response if the address was in the self-response universe and we received either a complete Mail response or a complete response via TQA.

For the self-response mode, if more than one response was received from a single address, the response that was received first was considered the mode of response for this test.

#### *Self-Response Universe Eligibility and Self-Response Criteria for Those Mailed the Paper Questionnaire Package*

The universe eligibility criteria for this mailing include the same criteria as the first mailing, along with the following restrictions:

- Only those addresses that were mailed a paper questionnaire package will be included in these rates.
- Housing units responding via the Internet before they could possibly have received the paper questionnaire will not be included in this universe unless they returned to the Internet instrument and provided a more complete response after the questionnaire was mailed to them.

- If we received a response in more than one self-response mode (Internet, TQA, or Mail) from a housing unit, we accepted the earliest response. If the earliest response was received before the Paper Questionnaire mailing was sent, the response will be used in the universe of the Initial Mailing only.

These cases are only being excluded from these rates because we wanted a way to quantify the impact of the mandatory message removal from the envelope for the questionnaire package mailing.

#### *CATI Eligibility and Response Criteria*

Cases eligible for CATI are previous nonresponding addresses and a small subset of unmailable addresses for which we have telephone numbers.

We counted a case as a CATI response if the address was in the CATI universe and, through a CATI interview, we obtained enough information for the response to be considered a complete or sufficient partial response. If we received a self-response after a CATI response, the CATI response was considered the mode of response for this test.

#### *Final Response Universe Eligibility and Response Criteria*

Because the CAPI operation is the most costly mode of data collection, it consists of a subsample of all remaining non-respondents after the CATI operation. To account for the subsampling of cases, we apply adjusted weights to all cases in the CAPI universe. The final response universe after the CAPI operation is the same as the self-response universe for the initial mailing with the following exceptions:

- All addresses sampled out of the CAPI operation are excluded, unless we received a response via mail or Internet before the close of the May 2015 panel data collection operations.
- Unmailable addresses are not excluded, unless they are sampled out.
- All cases that are determined to be out-of-scope during the CAPI operation are excluded from the universe. Some examples of out-of-scope addresses are: demolished home, home under construction, house or trailer moved, or the address is a permanent business or storage facility.

The Final Response Rate includes self-responses and CATI responses, as defined by the criteria above, and CAPI responses. A case is considered to be a CAPI response if the address was in the CAPI universe and, through a personal interview, we obtained enough information for the response to be considered a complete or sufficient partial response. If we received a self-response after a CAPI response, the CAPI response was considered the mode of response for this test. All self-responses received during the CAPI operation are counted as self-response, if they have not been previously considered a CAPI response

#### **2.5.4. Calculation of Weighted Rates and Differences between Treatments**

For all rates listed, we calculated a weighted numerator and denominator.

##### *Internet, Mail, and Total Self-Response*

The numerator is the sum of the base weights<sup>7</sup> of the cases determined to have a valid response in the Internet or Mail mode. The denominator is the sum of the base weights of the cases determined to be in the self-response universe.

##### *Final Response Rate*

For the final response rate, we adjusted the weights of cases eligible for CAPI by applying the appropriate CAPI subsampling factors. Due to the high cost of CAPI, ACS sends only a subsample of the cases that have not responded in previous modes to this final mode of data collection. We assign a subsampling factor to account for those that were not included.<sup>8</sup> We used the CAPI subsampling factor to adjust the base weight of each case in the final response universe that was not a self-response or CATI response and was selected in the CAPI subsample. We applied the adjustment to both interviews and non-interviews in CAPI. We used the adjusted weights to calculate the final response rate in the same way we used the unadjusted weights to calculate the earlier self-response rates.

The numerator is the sum of the weights of the cases determined to have a valid self-response, CATI response, or CAPI response in the ways described in the sections above. The denominator for the final response after CAPI is the sum of the weights of the cases determined to be in the final response universe.

All numerators, denominators, and rates were calculated separately for the Test Group and the Control Sort Group. The difference between treatments was calculated as the Control Sort Group rate minus the Test Group rate. We used two-tailed hypothesis testing to determine whether the differences between the groups were statistically significant at the  $\alpha = 0.1$  level.

#### **2.5.5. Calculation of Standard Errors**

The variances were estimated using the Successive Differences Replication (SDR) method with replicate weights, the standard method used in the ACS.<sup>9</sup> In calculating the return rates and response rates, we use the replicate base weights that account only for sampling probabilities. For each type of rate and treatment, we calculated the rate for the 80 half-sample replicates. Then, for each replicate, we calculated the difference between the Control Sort Group rate and the Test Group rate. The variance for each rate and group, and each difference, was calculated using the formula:

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<sup>7</sup> The base weight for a sample unit is the inverse of the probability of selection for that unit.

<sup>8</sup> Chapter 4 of the ACS Design and Methodology document (U.S. Census Bureau, 2014) has details regarding the process of applying CAPI sampling rates.

<sup>9</sup> Chapter 12 of the ACS Design and Methodology document (U.S. Census Bureau, 2014) has details and references regarding the SDR method for variance estimation.

$$Var(RR_0) = \frac{4}{80} \sum_{r=1}^{80} (RR_r - RR_0)^2$$

where

$RR_0$  = the return rate, response rate, or difference estimate calculated using the full sample base weights,

$RR_r$  = the return rate, response rate, or difference estimate calculated for replicate  $r$ .

Finally, the standard error for an estimate is the square root of the variance.

### 3. Assumptions and Limitations

#### 3.1. Assumptions

- 1) A single ACS monthly sample panel is representative of an entire year (12 panels) and the entire country, with respect to both return rates and costs.
- 2) A single Methods Panel Group (1/24 of the full monthly sample) is representative of the full monthly sample.

#### 3.2. Limitations

- 1) Self-response return rates, calculated before CATI, reflect only the mailable and deliverable address universe. Therefore, self-response return rates from this test are different from published ACS production rates.
- 2) Because the primary selection criteria for multiple responses for this test vary slightly from the criteria used in production, the final response rates may not exactly match official ACS production final response rates.
- 3) Because this report is preliminary, the results in the final report may differ slightly from these results.

### 4. Results

This report answers the research question, “What is the impact on response of removing the message **“YOUR RESPONSE IS REQUIRED BY LAW”** from the two mailing envelopes for the initial and paper questionnaire packages?” Each table in this section provides insight into answering the research question. The tables provide detailed information about the return rates and response rates calculated for this test. For each table in this section, the standard errors are in parentheses next to each rate. We performed two-tailed hypothesis testing for each rate difference to determine whether the difference was statistically significant or not. A “Yes” or “No” in the tables denotes whether or not each difference is statistically significant at  $\alpha = 0.1$  level.

Table 2 shows the self-response return rate results at various points in the data collection cycle and by mode (Internet and Mail) for all mailable and deliverable sample addresses in the ACS May 2015 panel. As is evidenced by the table, during all points in the data collection up until CATI operations, the Test Group Rate is significantly lower than the Control Sort Group rate. This is true regardless of response mode. For all mailable and deliverable sample addresses, the total self-response return rate for the Control Sort Group was 42.5 percent before CATI operations began. At this same point in time, the Test Group had a self-response return rate of 37.1 percent. The difference between the Test Group and Control Sort Group was 5.4 percentage points and was statistically significant.

**Table 2: Self-Response Return Rate Results by Mode at Selected Points  
in the Data Collection Cycle  
For all mailable and deliverable sample addresses**

<b>Total Self-Response (Internet &amp; Mail combined)</b>				
Point in Data Collection Cycle	Control Sort	Test	Difference	Significant?***
Before First Reminder Postcard	3.0 (0.2)	2.6 (0.1)	0.4 (0.2)	Yes
Before Paper Questionnaire Package	22.6 (0.4)	18.7 (0.3)	3.9 (0.5)	Yes
Before CATI	42.5 (0.5)	37.1 (0.4)	5.4 (0.5)	Yes

<b>Internet</b>				
Point in Data Collection Cycle	Control Sort	Test	Difference	Significant?***
Before First Reminder Postcard	3.0 (0.2)	2.6 (0.1)	0.4 (0.2)	Yes
Before Paper Questionnaire Package	22.2 (0.4)	18.5 (0.3)	3.7 (0.5)	Yes
Before CATI	28.5 (0.4)	24.4 (0.3)	4.1 (0.6)	Yes

<b>Mail</b>				
Point in Data Collection Cycle	Control Sort	Test	Difference	Significant?***
Before CATI	14.0 (0.3)	12.7 (0.3)	1.3 (0.3)	Yes

Source: U.S. Census Bureau, American Community Survey, 2015 Mandatory Envelope Messaging Test  
 \*\*\*Significant at  $\alpha=0.1$  level.

Table 3 is similar to Table 2 except that the universe includes only those addresses that were sent the paper questionnaire (addresses for which we had not previously received a response via the Internet). Since this was the second envelope that had the mandatory message removed, we wanted to calculate the return rates for only those that were sent the paper questionnaire package. This table shows results similar to Table 2. The Test Group rate is significantly lower than the Control Sort Group rate. For all mailable and deliverable sample addresses that were mailed the paper questionnaire package, the total self-response return rate for the Control Sort Group was 26.2 percent before CATI operations began. At this same point in time, the Test Group had a self-response return rate of 23.0 percent. The difference between the Test Group and Control Sort Group was 3.2 percentage points and was statistically significant.



**Table 3: Self-Response Return Rate Results by Mode before CATI**  
For all sample addresses mailed the paper questionnaire

	Control Sort	Test	Difference	Significant?***
<b>Total Self-Response (Internet &amp; Mail combined)</b>	26.2 (0.4)	23.0* (0.3)	3.2 (0.4)	Yes
<b>Internet</b>	9.4 (0.3)	8.1 (0.2)	1.2* (0.3)	Yes
<b>Mail</b>	16.8 (0.3)	14.8 (0.3)	2.0 (0.4)	Yes

Source: U.S. Census Bureau, American Community Survey, 2015 Envelope Mandatory Messaging Test  
\*Totals may differ due to rounding. \*\*Significant at  $\alpha=0.1$  level.

At the end of all data collection operations, we calculated the final response rates, including all response modes, for all sample addresses that were not rendered out of scope for this survey. Table 4 shows rates for all response modes at the end of the CAPI month. The final overall response rates and self-response return rates by mode are still significantly lower for the Test Group than they are for the Control Sort Group. The Control Sort Group had a final response rate of 96.3 at the end of CAPI and the Test Group had a final rate of 95.6 at the end of CAPI. The Test Group rate was significantly lower by 0.7 percentage points.

**Table 4: Final Response Rates and Response Distributions by Mode after CAPI**  
For all sample addresses in the Self-Response, CATI, and CAPI universes

	Control Sort	Test	Difference	Significant?***
<b>Final Overall Response</b>	<b>96.3* (0.2)</b>	<b>95.6 (0.2)</b>	<b>0.7 (0.3)</b>	<b>Yes</b>
<b>Internet</b>	31.3 (0.4)	28.3 (0.4)	3.0 (0.6)	Yes
<b>Mail</b>	21.2 (0.4)	18.9 (0.3)	2.4* (0.5)	Yes
<b>CATI</b>	3.2 (0.1)	4.0 (0.1)	-0.8 (0.2)	Yes
<b>CAPI</b>	40.5 (0.5)	44.4 (0.5)	-3.9 (0.8)	Yes

Source: U.S. Census Bureau, American Community Survey, 2015 Envelope Mandatory Messaging Test  
\*Totals may differ due to rounding. \*\* Significant at  $\alpha=0.1$  level

## 5. Conclusion

Feedback from stakeholders and respondents has raised concerns about the prominent references to the mandatory participation in the ACS. In order to be responsive to these concerns we conducted this test. The results of this test show that eliminating the phrase “**YOUR RESPONSE IS REQUIRED BY LAW**” from the initial mail package envelope and the paper questionnaire package envelope does significantly lower the self-response return rate by 5.4 percentage points, before the start of computer-assisted telephone interviews. After telephone and personal interviews, the final response rate among self-respondents in the Test Group was significantly lower than the Control Sort Group rate by 5.4 percentage points; the overall final response rate was significantly lower in the Test Group by 0.7 percentage points.

We are still evaluating the relative cost impact of the reduction in self-response returns as well as possible ways to mitigate those impacts. As context using Fiscal Year 2015 budget information, the cost per case in the workload for the personal visit operation is roughly 15 times as expensive

per case compared to mail and Internet. Therefore, methodological changes that reduce self-response and increase workloads in follow-up operations have significant cost impacts. Our preliminary estimate of the cost impact of eliminating mandatory messages from the envelopes in the manner we tested shows an increase in the annual costs of the survey by roughly \$9.5 million. This estimate will be refined for the final report. Additionally, methods that reduce self-response consequently increase the total number of contacts from the Census Bureau that respondents would receive by including them in the telephone or personal visit operations. Therefore, the perceived increase in burden for the respondent must be considered.

Further analysis of this test, including assessing the impact on hard-to-count populations, the impact on ACS estimates, and the relative cost impact, is ongoing. These will be among the topics discussed in the final report. This test is just the first step in our research to examine the impact of modifying the mandatory messages contained in the ACS mail materials. Additional testing that is being conducted in connection with the September 2015 ACS sample will provide important insights on ways to revise the mandatory messages in a more comprehensive manner throughout the various mail pieces, and other messaging and design enhancements to continue to be responsive to the feedback from stakeholders and respondents while preserving the quality of the survey.

## 6. References

Dillman, Don A., Eleanor Singer, Jon R. Clark, and James B. Treat (1996). "Effects of Benefits Appeals, Mandatory Appeals, and Variations in Statements of Confidentiality on Completion Rates for Census Questionnaires," *Public Opinion Quarterly*, Volume 60: 376-389.

Dillman, Don A. (2000). *Mail and Internet Surveys: The Tailored Design Method (2<sup>nd</sup> ed.)*. New York, NY: John Wiley & Sons, Inc.

Reingold, Penn Schoen Berland, Decision Partners, (2014). "American Community Survey Messaging and Mail Package Assessment Research: Cumulative Findings," Washington DC: U.S. Census Bureau.

[http://www.census.gov/acs/www/Downloads/library/2014/2014\\_Walker\\_02.pdf](http://www.census.gov/acs/www/Downloads/library/2014/2014_Walker_02.pdf)

U.S. Census Bureau (2014), "American Community Survey Design and Methodology (January 2014)", [http://www2.census.gov/programs-surveys/acs/methodology/design\\_and\\_methodology/acs\\_design\\_methodology\\_ch12\\_2014.pdf](http://www2.census.gov/programs-surveys/acs/methodology/design_and_methodology/acs_design_methodology_ch12_2014.pdf), accessed July 15, 2015.

# Attachment A – ACS Production Envelopes May 2015 ACS Production Versions

Initial Mail Package Envelope:

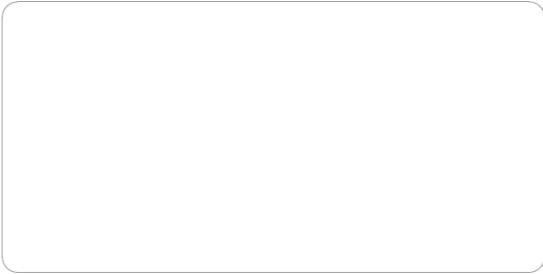

<p><b>U.S. DEPARTMENT OF COMMERCE</b> Economics and Statistics Administration <b>U.S. CENSUS BUREAU</b> 1201 East 10th Street Jeffersonville IN 47132-0001 OFFICIAL BUSINESS Penalty for Private Use \$300 <b>ACS-46IM(2013)</b> (12-2012)</p>	<p>AN EQUAL OPPORTUNITY EMPLOYER</p>	<p>PRESORTED FIRST-CLASS MAIL POSTAGE &amp; FEES PAID U.S. Census Bureau Permit No. G-58</p>
<p>The American Community Survey <b>YOUR RESPONSE IS REQUIRED BY LAW</b></p>		

Paper Questionnaire Package Envelope:

<p><b>U.S. DEPARTMENT OF COMMERCE</b> Economics and Statistics Administration <b>U.S. CENSUS BUREAU</b> 1201 East 10th Street Jeffersonville IN 47132-0001 OFFICIAL BUSINESS Penalty for Private Use \$300 <b>ACS-46(2012)</b> (5-2011)</p>	<p>AN EQUAL OPPORTUNITY EMPLOYER</p>	<p>PRESORTED FIRST-CLASS MAIL POSTAGE &amp; FEES PAID U.S. Census Bureau Permit No. G-58</p>
<p>The American Community Survey Form Enclosed <b>YOUR RESPONSE IS REQUIRED BY LAW</b></p>		

# Attachment B – ACS Test Treatment Envelopes May 2015 ACS Test Versions

## Initial Mail Package Envelope:

<p><b>U.S. DEPARTMENT OF COMMERCE</b> Economics and Statistics Administration <b>U.S. CENSUS BUREAU</b> 1201 East 10th Street Jeffersonville IN 47132-0001</p> <p>OFFICIAL BUSINESS Penalty for Private Use \$300</p> <p><b>ACS-46IM(X)(2015)</b> (3-2015)</p>	<p>AN EQUAL OPPORTUNITY EMPLOYER</p>	<p>PRESORTED FIRST-CLASS MAIL POSTAGE &amp; FEES PAID U.S. Census Bureau Permit No. G-58</p>
		
		

## Paper Questionnaire Package Envelope:

<p><b>U.S. DEPARTMENT OF COMMERCE</b> Economics and Statistics Administration <b>U.S. CENSUS BUREAU</b> 1201 East 10th Street Jeffersonville IN 47132-0001</p> <p>OFFICIAL BUSINESS Penalty for Private Use \$300</p> <p><b>ACS-46(X)</b> (3-2015)</p>	<p>AN EQUAL OPPORTUNITY EMPLOYER</p>	<p>PRESORTED FIRST-CLASS MAIL POSTAGE &amp; FEES PAID U.S. Census Bureau Permit No. G-58</p>
<p>The American Community Survey Form Enclosed</p>	