

## **Strategies to Improve Response Rates for Current Economic Programs<sup>1</sup>**

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### **Abstract**

The Economic Programs Directorate conducts about 70 surveys that measure a variety of economic activity in the United States. These programs are conducted on a monthly, quarterly or annual basis and provide varying degrees of detail. Over the past couple of years, program managers have been experimenting with new strategies to improve response rates for their programs. These strategies have improved the overall response rates and data quality for programs. This paper discusses these strategies used for current surveys conducted within the manufacturing and wholesale sectors of the economy, and the improvements resulting from these strategies.

Keywords: Response, Current Industrial Reports, Annual Wholesale Trade Survey

### **1. Current Industrial Reports**

#### **1.1 Survey Description**

The Current Industrial Reports (CIR) provides monthly, quarterly, and annual measures of industrial activity. There are 42 CIR's divided amongst four branches in the form of 5 monthlies, 11 quarterlies, and 26 annuals. The majority of CIR's are mandatory, while a select few are voluntary due to the presence of an outside sponsor. The primary objective is to produce timely and accurate data on production, shipments, and stocks of selected products. Data are then used to meet the needs of economic policy as well as for market analysis, forecasting, and decision-making in the private sector.

#### **1.2 Analyst Support Team**

Prior to 2005, delinquent follow up procedures were handled at the National Processing Center (NPC) in Jeffersonville, Indiana by clerical staff. The clerical staff at NPC was charged with delinquent follow up calls, as well as CIR customer inquiries. It was determined in early 2005 that the cost-benefit relationship of the clerical staff at NPC was no longer adequate. The process was subsequently moved to Census Bureau headquarters in Suitland, Maryland.

The Census and Related Programs of the Manufacturing, Mining and Construction Division (MCD) created the Analyst Support Team in the fall of 2005 in response to efforts attempting to improve response rates and to save on costs incurred at outsourcing the task to the National Processing Center. We have also worked towards reaching response and coverage rate standards earlier for our Current Industrial Reports program. The subsequent goal is to aid in analysts' efforts in releasing these reports earlier than before and as early as possible in an effort to meet customers' requests for data sooner. The primary objective of the team is to carry out and improve delinquent follow up procedures through telephone contact with establishments for our annual, quarterly, and monthly Current Industrial Reports.

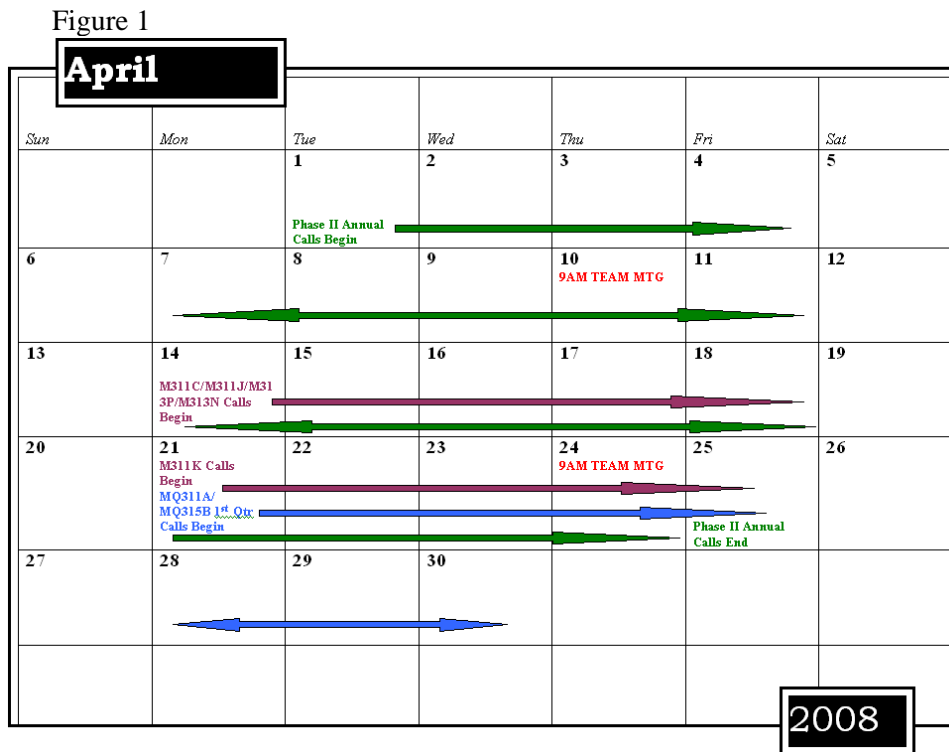
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<sup>1</sup> This report is released to inform interested parties of (ongoing) research and to encourage discussion (of work in progress). Any views expressed on (statistical, methodological, technical, or operational) issues are those of the author(s) and not necessarily those of the U.S. Census Bureau.

The team has been made up of 18 callers and 7 team leaders at its peak; while in 2009, the team is down to 13 callers and 7 team leaders. Callers are office assistants, clerks and secretaries and the team leaders have one representative from each branch. Callers are expected to make five delinquent phone calls per hour for four hours each day. Team leaders meet weekly to monitor progress, prepare future projects, and update branches on team activities and progress. Regular team meetings with callers occur every two weeks. In starting the team, the team leaders made sure to train the team on the data processing and imaging systems the analysts use allowing them to access updated contact information and data. Throughout the lifecycle of the team, efforts have been made to increase caller efficiency. One such example was the use of an in-house Census representative’s “How to Improve Delinquent Call Performance” interactive training session. Lessons Learned are also conducted at the end of each calendar year to gather team feedback on various call scenarios and procedures. We include the survey analysts in the process as well to create the delinquent call logs, fill in callers on survey specific information, and to suggest strategies for specific companies reporting. Data referenced throughout section 1 of this paper was obtained from Analyst Support Team monitoring documents. All of this combined has helped make the Analyst Support Team successful throughout the years.

### 1.3 Strategies for Improving Check-In Rates

Certain strategies that were developed by the AST were extremely beneficial to the team’s primary objective. The team calendar (see Figure 1) was created as an informational tool that would benefit callers and analysts alike when it comes to resource allocation and project deadlines. The use of the calendar resulted in the start of annual CIR delinquent phone calls being moved up two weeks.



Our second method for improving check-in rates revolved around the delinquent call log files (See Figure 2). The process for creating a delinquent call log was simplified into one uniformed process. Each delinquent call log would only contain the necessary and vital information needed by a caller to perform a successful follow-up call. The use of metrics (based on caller call logs) supplied team leaders with the data on call totals and call success. Call performance was measured through the use of a drop-down list in each cell of every call log. Callers must notate one of the possible call end-results through the use of the drop-down list – voicemail, no answer, contact, or refusal.

Figure 2

FORM	IMPI	ND	ID	ALPHA	MAIL	NAME1	CITY	ST	CONTACT	AREA	PRE	SUFF	EXT	Data Call 1	Data Call 2	Comments
M311J		0.35	1234567894	56989		Company A	City 1	State 1	Contact Name 1	555	111	2222	8/18/2009			LM on VM
M311J		0.01	1234567895	56987		Company B	City 2	State 2	Contact Name 2	556	112	2223	8/18/2009			I talked to Brian
M311J		0.14	1234567896	56985	10	Company A	City 3	State 3	Contact Name 3	557	113	2224	8/18/2009			she mailed it in
M311J		0.11	1234567897	56983	10	Company B	City 4	State 4	Contact Name 4	558	114	2225	8/18/2009			she mailed it in
M311J		0	1234567898	56981		Company A	City 5	State 5	Contact Name 5	559	115	2226	8/18/2009			LM on VM
M311J		1.91	1234567899	56979		Company B	City 6	State 6	Contact Name 6	560	116	2227	8/18/2009			LM on VM
M311J		0.97	1234567900	56977		Company A	City 7	State 7	Contact Name 7	561	117	2228	8/18/2009	8/18/2009		LM w/person in
M311J		0.05	1234567901	56975		Company B	City 8	State 8	Contact Name 8	562	118	2229	8/18/2009			Jeff has the form
M311J		0.41	1234567902	56973		Company A	City 9	State 9	Contact Name 9	563	119	2230	8/18/2009			LM on VM
M311J			1234567903	56971		Company B	City 10	State 10	Contact Name 10	564	120	2231	8/18/2009			will fax by the end
M311J		0.03	1234567904	56969	10	Company A	City 11	State 11	Contact Name 11	565	121	2232	8/18/2009			faxed it yesterday

AST call metrics such as survey statistics, call statistics, and end-result data for the CIR program are compiled in the AST Master Tracker (see Figure 3).

Figure 3

Annals 2007		Survey Statistics								Caller Statistics				
Survey	Analyst	Check-In Rate	Coverage Rate	Forms for 70% CKIN	Satisfied Date for Rates	Scheduled Release Date	Actual Release Date	Satisfied to Release Date	Caller	Calls Recorded	Estabs Called	Forms Received	Total # of Estabs	
335E	Analyst 1	74.5	94.4	-2	20-May	23-May	22-May	2 days	Caller 1	133	59	35	73	
314Q	Analyst 2	75.8	98.2	-8	28-May	30-May	30-May	2 days	Caller 2	100	54	22	62	
335F	Analyst 3	80.4	97.6	-11	8-Apr	6-Jun	22-Apr	8 days	Caller 3	59	43	50	50	
333M	Analyst 4	74.2	90.4	-14	13-May	11-Jun	3-Jun	12 days	Caller 4	94	77	65	181	
335J	Analyst 5	73.3	84.7	-7	10-Jun	13-Jun	13-Jun	3 days	Caller 5	120	120	42	120	
335K	Analyst 6	76.4	81.4	-23	16-Jun	16-Jun	16-Jun	0 days	Caller 6	171	105	78	154	
332Q	Analyst 7	80.8	94.0	-16	29-Apr	16-Jun	2-Jun	20 days	Caller 7	90	53	41	87	
325F	Analyst 8	74.5	95.0	-24	6-May	19-Jun	2-Jun	15 days	Caller 8	87	37	31	37	
333D	Analyst 9	79.8	92.2	-24	29-Apr	20-Jun	30-Jun	38 days	Caller 9	8	8	0	99	
334D	Analyst 10	78.2	91.7	-32	13-May	20-Jun	12-Jun	19 days	Caller 10	199	126	36	140	
333F	Analyst 11	83.9	97.1	-16	3-Jun	20-Jun	13-Jun	7 days	Caller 11	51	41	15	42	
311D	Analyst 12	68.9	86.2	2	23-Jun	23-Jun	23-Jun	0 days	Caller 12	173	66	31	74	
321T	Analyst 13	72.7	87.6	-56	13-May	24-Jun	22-May	6 days	Caller 13	76	71	32	355	

### 1.4 Analysis of AST Procedures from 2005 – 2008

By creating the Analyst Support Team, analysts could then focus more of their energy on reviewing content and data rather than delinquent follow up procedures. Team members are required to make four follow up calls to each company and/or establishment before escalating the case to the analyst. Most cases never make it to the fourth follow up call before obtaining survey response. In instances where establishments have survey specific questions, these cases are immediately escalated to the analyst as they have the report knowledge necessary to answer. Because of this, we have been able to make a total of 26,863 phone calls since the team began making phone calls in early 2006. In our first year of activity, 2006, the team was able to make a total of 7,280 calls contacting 4,720 establishments for all of our Current Industrial Reports. In 2007, at the height of our team’s activities, we were able to complete 11,021 calls in contacting 7,233 establishments. In 2008, when dealing with a shrinking team, we were able to conduct 8,562 phone calls and contact 5,517 establishments. See Table 1 for more detailed statistics on how these totals were spread throughout the annual, quarterly, and monthly reports.

Table 1

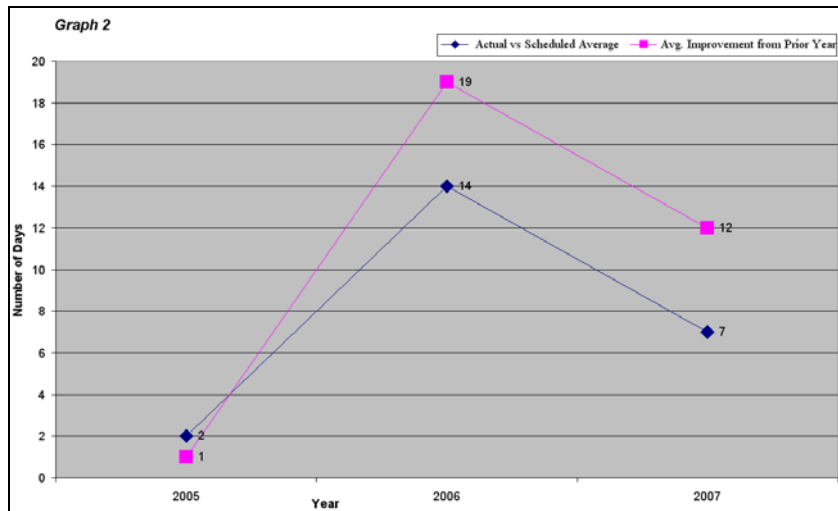
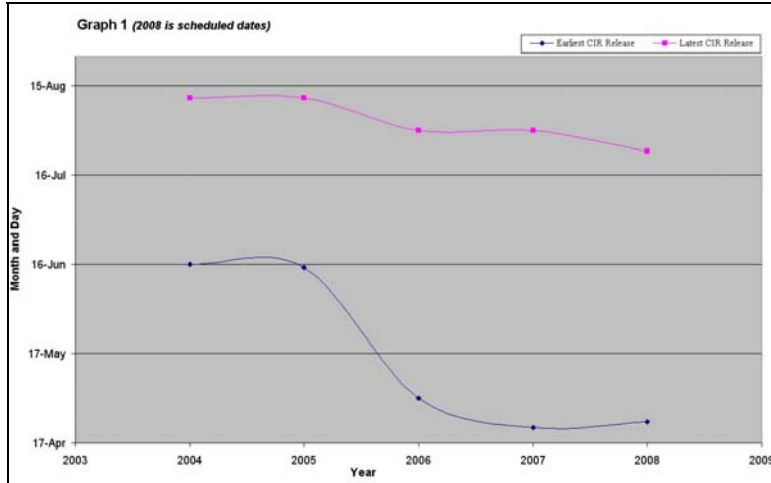
CIR Calls*	2006	2007	2008
Annuals Calls	3,000	3,680	3,100
Quarterlies Calls	4,280	4,746	3,587
Monthlies Calls	N/A	2,595	1,875
Total Calls	7,280	11,021	8,562
Annual Estabs Called	2,100	2,197	1,816
Quarterly Estabs Called	2,620	2,912	1,972
Monthly Estabs Called	N/A	2,124	1,729
Total Estabs Called	4,720	7,233	5,517
% of Multiple Calls	35%	34%	36%

\*Amounts determined by when completed, not by the surveys statistical period

Our main goal since the team's inception has been to reach our targets set as part of the Performance Assessment Rating Tool (PART) earlier to allow the analysts to release their survey reports earlier. These PART standards are established in conjunction with the Office of Management and Budget (OMB) to help assess and improve program performance to enable us to achieve better results. Through the end of 2008, the standard was set at a 70% response rate and an 80% coverage rate. Current definitions of response and coverage rate as used by the Manufacturing and Construction Division:

The *response rate* is calculated by dividing the total number of forms mailed from the number of forms received. The *coverage rate* is calculated by dividing the prior year total value from the current year total value received.

Beginning in 2009 these standards are now 80% response and 80% coverage. For 2004 Annuals, before the team was created, the first report was released June 16, 2005. In 2008, MCD was able to release the first 2007 Annual report on April 22<sup>nd</sup>, an improvement of 55 days in 3 years. We have also been able to help the division in meeting its goal of releasing all Annuals by July 31<sup>st</sup> every year. This has allowed resources to open up for other projects such as delinquent follow-ups for the Annual Survey of Manufactures and 2007 Economic Census. Graph 1 below represents these improvements on a yearly basis since 2004. By hitting rates earlier, not only have surveys been able to be released earlier than before, they have also been able to be released before their scheduled release date. In 2007, the average 2006 Annual survey was actually released to the public 14 days prior to its scheduled release date. As an added success of these efforts, in 2007 the average actual release date improved 19 days from the previous year for these same surveys. See Graph 2 for these yearly averages since 2004.

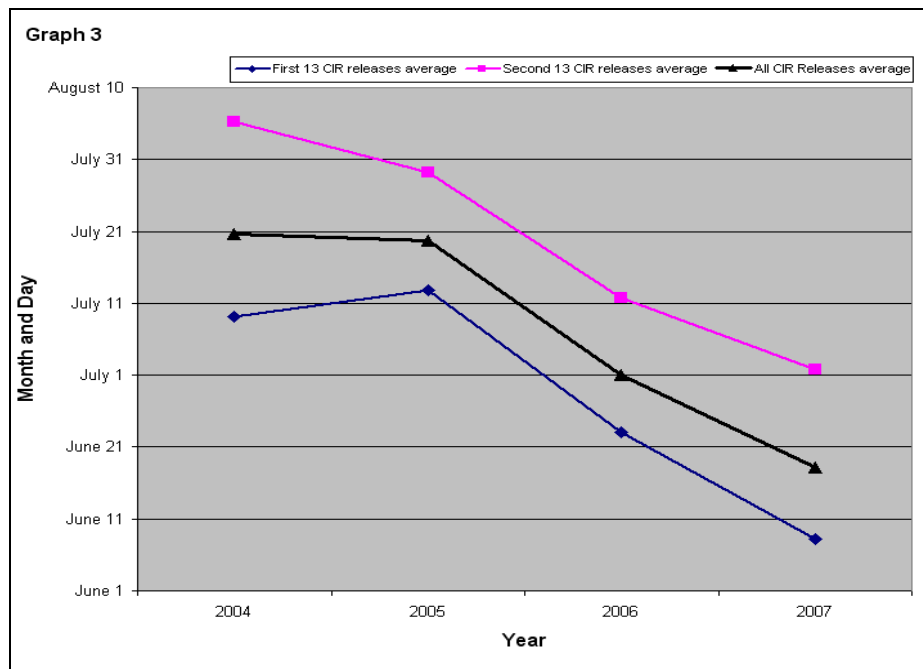


Throughout the years, we have come across some strategies that have facilitated team successes. Beginning calls as soon as possible has been the biggest contributor to our success. For 2007 Annuals, we were able to begin follow up calls on March 1, 2008. In comparison, we were able to move the start date of the 2008 Annuals to February 23, 2009. As a result, we expect to be able to release all 2008 Annual reports by July 24, 2009. For our more frequent surveys, such as the quarterlies and monthlies, we begin the delinquent follow up procedures as soon as the reporting due date passes. This gives us more time to complete our follow up and it tends to be fresh in the minds of respondents. The use of uniform delinquent call logs has also helped in our efforts to improve efficiency from year to year. We are constantly receiving input from team members of what data they would like to see in these logs to help in their work. Due to this input, a recent addition to the logs has been including respondents' city and state information so that callers can easily identify time zones. To alleviate the time it takes to resend a form to a respondent, each analyst is required to provide a blank copy of their survey form to their caller so that callers can fax these forms to respondents upon request. As a result, we typically receive their response in the next day or two. These are the strategies we have adopted since the team's inception in 2005 that have proven to be very successful.

### 1.4 Impact of AST on Annual CIR Program

The aforementioned strategies impact on response rates are supported by the Annual CIR program. Release dates from 2004 to 2007 CIR's have been compiled to show the improvements made on release dates resulting from delinquent calls in 2006, 2007, and 2008. The Annual CIR program has been broken into two phases – surveys with release dates before August 1<sup>st</sup> (First Phase) and surveys with releases after August 1<sup>st</sup> (Second Phase) circa 2004. For 2004, delinquent follow up calls were not completed by the AST. Delinquent follow up calls by the AST started in 2005. On average, first phase annuals in 2004 were completed around July 9. In 2007, first phase annuals were completed by June 8 – an improvement of 31 days after just three years. The second phase annuals had an average release date of August 5<sup>th</sup> in 2004. In 2007, their average release date was July 1<sup>st</sup> – an improvement of 34 days. In our estimation, the AST has been a huge success due to the average release date improvement of all Annual CIR's by 32 days (see Graph 3).

The CIR program has been positively impacted due to the work of the Analyst Support Team in completing delinquent follow up procedures. Work done by our team has led to increased staff involvement and interaction. Analysts can now spend more time reviewing data; once their survey hits the OMB rates, they can release their reports in less time. Even with fewer callers and higher OMB standards, the Current Industrial Reports program will still meet or exceed expectations in 2009 and into the future.



### 1.5 Secondary Objectives

Supporting the MCD has been the main secondary objective of the AST. Successful follow-up calls for the Annual Survey of Manufacturers and Economic Census have been completed for 2005, 2006, and 2007. Numerous smaller projects have also been done during the past three years; including two phone number look-up projects at a 90% success rate and a data copulation task for two MCD surveys.

## 2. Annual Wholesale Trade Survey

### 2.1 Survey Description

The Service Sector Statistics Division conducts the Annual Wholesale Trade Survey (AWTS) each year through a mail-out/mail-back process. Mail-out occurs in January with follow-up mailings and telephone reminder calls typically occurring at set intervals through August. The purpose of the AWTS is to provide detailed industry measures of sales and inventories for wholesale trade activities. The United States Code, Title 13, authorizes this survey and provides for mandatory responses. The AWTS is a sample survey, with a sample of approximately 8,000 firms randomly selected every 5 to 6 years. The AWTS is made of three types of wholesalers – distributors; manufacturers' sales branches and offices; and agents, brokers, and electronic markets.

The AWTS, like many economic surveys at the Census Bureau, has two staffs used in collecting and analyzing data. Staff located at the NPC in Jeffersonville, Indiana is responsible for the day-to-day operations of receiving, imaging, and keying forms received from survey respondents. This staff is also used to handle incoming calls from respondents and to make reminder calls to delinquent respondents for the survey. Staff located at the Census Bureau headquarters in Suitland, Maryland is responsible for providing guidance to the NPC staff, as well as performing data analysis and dissemination of survey results.

### 2.2 Analysis of 2006 AWTS Procedures

The collection and analysis processes from the 2006 AWTS were analyzed to determine if the 2007 AWTS could be conducted in a more timely and effective manner. One of the main concerns that arose from this analysis was that the NPC personnel assigned to make and receive calls were also responsible for almost a dozen economic surveys. This required each person on the staff to know details for many surveys that varied in topic and procedure. It also created a time crunch and competing priorities since several of the surveys handled by this staff had similar timelines for incoming and outgoing phone calls. The makeup and management of the NPC staff was also not controlled directly by the headquarters survey manager, so changes in this structure were difficult to make. Based on this analysis, the survey manager suggested an experiment to use summer interns at headquarters to handle the outgoing reminder calls. To cover the cost of this arrangement it was proposed that the NPC staff not be used at all for incoming or outgoing phone calls, as well as any other miscellaneous activities performed by those involved in handling calls. Activities not performed/completed by the summer interns would have to be handled by headquarters staff. For instance, all incoming calls that would have normally been routed to the NPC staff would now need to be routed to the headquarters staff. The expected benefits from these changes included:

- Choice of who got hired to handle telephone duties
- Interns might have better computer skills and higher motivation than NPC staff
- Direct control over work being performed
- Improved monitoring of metrics per employee
- Improved lines of communication
- Quick and accurate handling of respondent questions
- Ability to fill in any “down” time with additional survey work
- Greater chance to meet the required response rate goal set by the Office of Management and Budget

- Greater chance to complete analysis and release estimates earlier
- Summer positions could serve as a trial period for potential full-time employment after graduation
- More opportunities for headquarters analysts to learn the intricacies of the survey and the process used to collect data

Another outcome of the analysis was that the quantity and timing of follow-ups performed could be modified with little or no effect on cost. The established follow-up schedule was two non-certified follow-up mailings, a telephone reminder call, and then a final follow-up mailing via certified mail. It was determined that the second follow-up mailing could be switched to certified and that no follow-up mailing needed to be done after the telephone reminder calls. The cost saved from one less mailing would probably be offset by the larger cost to send the second follow-up mailing via certified. The certified follow-up mailing also generates the largest response of any follow-up activity performed; therefore, moving this mailing prior to the telephone follow-up efforts would also help lower the workload of reminder calls.

The last outcome from the analysis was that headquarters management could improve oversight of several components of the survey. There were no metrics officially kept for the number or type of incoming calls received. There were probably lost opportunities with improvements to the survey since we only had a vague understanding of what motivated respondents to call. Management was also lax in overseeing the workload of the headquarters staff in regards to the completion of receipts flagged for analyst referral. These referrals are typically forms that are returned with incomplete or no data and often require a phone call from an analyst. Without proper oversight by management these referrals sometimes sat for months with no resolution, which decreased the chance of getting data. Additionally, a small segment of the sample forms were returned blank with no explanation provided. Such cases were never followed up on, resulting in a non-response count in the final survey estimates.

### **2.3 Results From 2007 AWTS Changes**

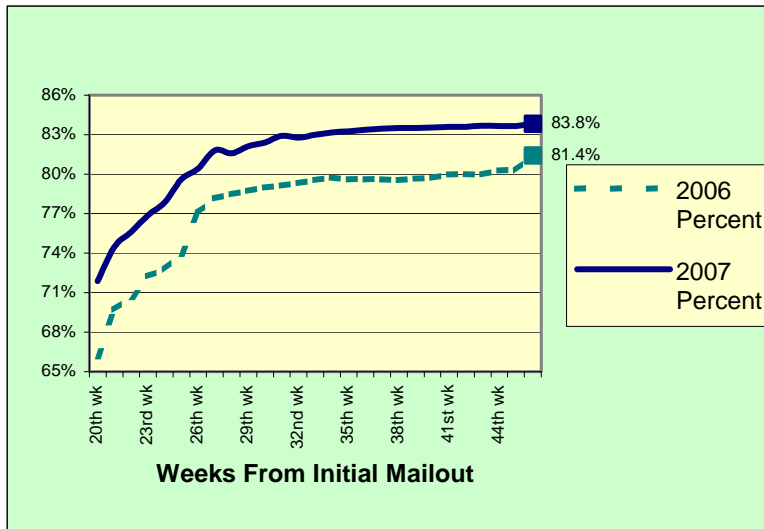
The changes made to the 2007 AWTS showed a positive impact on the survey. The revised procedures resulted both response rate improvements and processing improvements.

While likely not solely due to the changes implemented for the 2007 survey year, the final achieved unit response rate for the 2007 AWTS was 2.4 percentage points higher than the 2006 AWTS in spite of lower expectations due to a supplemental form requesting detailed operating expenses (collected once every five years). The Census Bureau standard on calculating response rates was used. Simply put, the unit response rate is calculated by dividing the number of responding company units by the number of eligible company units. For the 2006 AWTS there were 7,583 eligible company units and 6,173 responding company units. For the 2007 AWTS there were 7,238 eligible company units and 6,066 responding company units.

Additionally, the required unit response rate threshold required by the Office of Management and Budget was met two weeks earlier, even with the required rate being 0.5 percentage points higher than the 2006 AWTS.



Graph 4. AWTS Unit Response Rate: 2007 and 2006



The changes made to the process by having all of the incoming and outgoing calls originate with the headquarters staff led to many observed efficiencies. By having the survey analysts answer the incoming respondent calls, many questions could be answered quickly. This led to fewer analyst referrals to be processed. In fact, the total number of analyst referrals dropped approximately 33% (788 in 2007 vs. 1,169 in 2006). The lower number, as well as the fact that the analysts were receiving the calls, allowed most referrals to be completed within a few weeks of receipt. This compares to delays of upward of several months in prior years. By processing the referrals quicker and working with the companies to answer their questions, the overall delinquent workload decreased as well. The decline between 2007 and 2006 of approximately 8% in the overall delinquent workload (2,041 in 2007 vs. 2,210 in 2006), coupled with the focus of the summer interns solely on the reminder calls for one survey (AWTS), allowed the overall data collection activities to be wrapped up one month earlier than in the previous year. One other benefit of processing the calls in the headquarters staff was the ability to gather metrics on how many calls were received, as well as the reasons why the call was generated. This helps us not only have a better grasp on the volume of calls, but allows us to better understand the types of issues companies have in completing our survey. This could lead to future survey form enhancements or even improved training for the staff receiving the calls to allow processing of these questions even more efficiently.

### 3. Summary

In summary, both programs have benefited by moving the delinquent phone calling process from NPC to headquarters. By having more direct control over the process, both areas have improved their monitoring of the work, improved communication among staff, taken advantage of leveling the schedule of work flow, and improved the chances of meeting OMB enforced response rates. The respective changes have resulted in processing and response rate improvements as well as accelerating the release schedule. Other programs may use these techniques in the future with the same type of beneficial effects.

### **Acknowledgements**

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