

FINAL REPORT

Quantitative Research on the Women-Owned Small Business Federal Contract Program

Prepared by
Innovation & Information Consultants, Inc.
Orlando, FL

Prepared for
Emily Bruno
National Women's Business Council

SBAHQ-12-M-0208

July 2, 2013

Table of Contents

List of Acronyms	ii
List of Tables	iii
List of Figures	iv
Chapter 1. Executive Summary	1
Chapter 2. Introduction	3
Chapter 3. Research Design and Methodology	7
Chapter 4. WOSB General Procurement Trends	13
Chapter 5. Industry and Agency Analysis	20
Industry (NAICS) Analysis.....	20
Agency Analysis	25
Chapter 6. Vendor-level WOSB Procurement Analysis	32
Chapter 7. Set-Aside Analysis	39
Chapter 8. Additional Procurement Analyses	52
Contract Action Type.....	52
Type of Contract Pricing.....	53
Solicitation Procedures	53
Extent Competed.....	54
Reason Not Competed	54
Product-Service Code	55
Chapter 9. Key Conclusions and Future Research	57

List of Acronyms

Acronym	Definition
CCR	Central Contractor Registry
CSV	Comma Separated Value
DHS	Department of Homeland Security
DOD	Department of Defense
DUNS	Data Universal Numbering System
ED	Economically Disadvantaged
EDWOSB	Economically Disadvantaged Women-Owned Small Business
FCP	Federal Contract Program
FPDS-NG (FPDS)	Federal Procurement Data System - Next Generation
FY	Fiscal Year
GAO	General Accounting Office
GSA	General Services Administration
HubZone	Historically Underutilized Business Zone
HUD	Department of Housing and Urban Development
IDV PIID	Indefinite Delivery Vehicle Procurement Instrument Identifier
NAICS	North American Industry Classification System
NASA	National Aeronautics and Space Administration
NAWBO	National Association of Women Business Owners
OtherLB	Large business that is not majority-owned by women
OtherSB	Small business that is not majority-owned by women
PIID	Procurement Instrument Identifier
PSC	Product Service Code
RSB	Reserved for Small Business
SAM	System for Award Management
SAP	Simplified Acquisition Procedures
SBA	Small Business Administration
SBO	Survey of Business Owners
SDVOSBC	Service Disabled Veteran Owned Small Business
SU	Substantially Underrepresented
VA	Veterans Affairs
WIPP	Women in Public Policy
WOB	Women-Owned Business
WOLB	Women-Owned Large Business
WOSB	Women-Owned Small Business

List of Tables

Table 4-1. General Procurement Trends (Contracts and Dollars) FY2000-FY2013	14
Table 4-2. Small Business Procurement Metrics.....	15
Table 4-3. Average Procurement Award (per Contract) Analysis.....	16
Table 5-1. WOSB Contract Share for the Top Five Agencies.....	26
Table 5-2. WOSB Award Share for the Top Five Agencies.....	28
Table 5-3. Agencies Failing the WOSB FCP Goals, FY2012	30
Table 6-1. Vendor (DUNS) Analysis by Business Type	33
Table 6-2. Small Business Vendors Receiving a Contract Award Each Fiscal Year	34
Table 6-3. WOSB Vendor Participation by Number of Years Awarded a Contract	35
Table 7-1. Summary of Set-Aside Programs and Federal Procurement Awards	40
Table 7-2. Set-Aside Analysis by Major Agency	41
Table 7-3. Set-Aside Analysis by Major Industry NAICS Codes	43
Table 7-4. Analysis of EDWOSB and WOSB Set-Aside Contracts	43
Table 7-5. Analysis of EDWOSB and WOSB Set-Asides by Major NAICS Code	45
Table 7-6. Summary of Designated NAICS without a an EDWOSB or WOSB Set-Aside Award.....	46
Table 7-7. Department of Defense WOSB FCP Contract Awards by Industry.....	47
Table 7-8. Vendor Participation in EDWOSB and WOSB Set-Aside Procurement Opportunities.....	48
Table 7-9. Contract Analysis of Vendors Receiving an EDWOSB or WOSB Set-Aside Contract.....	50
Table 8-1. Analysis of Top 10 PSCs for WOSBs	56

List of Figures

Figure 1-1. Percent of Total Federal Prime Contract Dollars Awarded to WOSBs	4
Figure 3-1. IIC, Inc. Contract Roll Up.....	10
Figure 4-1. Summary of Contracts and Awards by Business Type	15
Figure 4-2. Ratio of WOSB Contract Statistics to OtherSB Contract Statistics.....	18
Figure 5-1. Analysis of Procurement Statistics for 83 Designated NAICS versus Non-Designated NAICS.....	21
Figure 5-2. NAICS 3322 Procurement Scorecard	23
Figure 5-3. WOSB Share of Contracts and Dollars NAICS 3391	24
Figure 5-4. WOSB Share of Contracts and Dollars for NAICS 5413 and NAICS 5415	25
Figure 5-5. Agency 9700: Department of Defense Procurement Scorecard	27
Figure 5-6. Number of Agencies Successful in Meeting the 5 Percent WOSB Share Goal.....	30
Figure 6-1. Concentration of Awards (\$) for WOSBs by Vendor Count	37
Figure 7-1. WOSB Share for the Top Four Set-Asides	41
Figure 7-2. Percentage of Total Dollars Funded Through Set-Asides, DoD and GSA	42
Figure 7-3. Agencies Funding WOSB and EDWOSB Set-Aside Contacts.....	44
Figure 8-1. Analysis of Contracts and Dollar Awards by Contract Action Type – FY2007 through FY2012	52

Chapter 1. Executive Summary

The Women-Owned Small Business Federal Contract Program (WOSB FCP) aims to reduce the inequity in award and distribution of prime Federal contracts to Women-Owned Small Businesses (WOSBs). The WOSB FCP includes policies designed to promote WOSB Federal procurement activity, such that WOSBs procure at least 5 percent of total prime Federal contracts in a given year. The principal mechanisms available to increase WOSB participation in Federal procurement are “set-asides,” in which contracting agencies set aside certain Federal contracts specifically for WOSBs in an effort to reach the 5 percent contracting objective.

The primary focus of our analysis was to evaluate the impact of the WOSB FCP on the participation of and awards granted to women-owned small businesses. Of principal interest was whether WOSBs are meeting procurement thresholds of 5 percent (in both contract number and dollar amount) of total Federal prime contracting awards since the implementation of the WOSB FCP rules in 2011. In order to address this, and other procurement research questions, we performed a comprehensive analysis of WOSB procurement beginning in fiscal year (FY) 2000. We relied on procurement data from the Federal Procurement Data System – Next Generation (FPDS-NG) database and tabulated procurement records on a contract basis. We subsequently analyzed contract procurement data on a fiscal-year basis, with a special focus on WOSB procurement trends by industry, agency, and the use of set-asides. When warranted, we analyzed vendor-specific trends to support data observations. Our principal conclusions, as discussed in more detail in our report, include:

- WOSBs have typically increased their proportionate share of contracts awarded and dollars awarded year over year from FY2000 through FY2012. (**Chapter 4**)
- Despite WOSB progress, average WOSB awards remain lower than those of other small businesses. (**Chapter 4**)
- The contract award gender gap appears to be closing in select industries, most notably in NAICS¹ 3359 (Other Electrical Equipment and Component Manufacturing), NAICS 5416 (Management, Scientific and Technical Consulting Services), and NAICS 6214 (Outpatient Care Centers). Each of these NAICS codes represent an industry in which WOSBs are substantially underrepresented. (**Chapter 5**)
- The number of industries in which the WOSB share of awards is greater than the WOSB share of contracts remains low, indicating that on average, WOSBs are earning less money per contract than non-WOSBs in the majority of industries. (**Chapter 5**)
- Within the 83 underrepresented NAICS industries, WOSBs are meeting the contract threshold on average, but remain underrepresented in terms of awards share. (**Chapter 5**)

¹ The North American Industry Classification System (NAICS) is the standard used by Federal agencies in classifying business establishments for the purposes of collecting, analyzing, and publishing statistical data related to the U.S. business economy. (<http://www.census.gov/eos/www/naics/>)

- Almost half of all WOSB vendors received contracts only in a single fiscal year, indicating a high rate of turnover – however, it is likely some of these vendors have remained active in procurement but contracted as a different business type (e.g., change in gender ownership), as a WOSB bidding on, but not receiving contracts, through subcontracting, or as a relatively new vendor with anticipated participation and awards post-FY2012. (**Chapter 6**)
- WOSB vendors who demonstrate long periods of activity across different fiscal years tend to receive a greater share of contract dollars. (**Chapter 6**)
- WOSB contract dollars are highly concentrated among select vendors in each fiscal year, although there is often a shift in the specific vendors between fiscal years (i.e., it is not necessarily the same vendors receiving disproportionately large shares of awards year after year). (**Chapter 6**)
- WOSBs have increased their procurement share through set-aside programs over time. (**Chapter 7**)
- The introduction of the WOSB FCP and the EDWOSB and WOSB set-asides has generated more than \$100 million in contract awards restricted to WOSBs. (**Chapter 7**)
- The WOSB FCP has facilitated entry of new participants through the use of the WOSB and EDWOSB set-asides. (**Chapter 7**)
- Consistent with general procurement trends for WOSBs, vendors with more longevity and stability (i.e., receiving contracts in multiple fiscal years) were able to secure a larger portion of contracts through the use of the WOSB and EDWOSB set-asides. (**Chapter 7**)
- Between FY2007 and FY2012, the most common type of contract award for WOSBs was a purchase order, followed closely by delivery orders. (**Chapter 8**)
- One reason for potential disparities in award levels between WOSBs and non-WOSBs is that the average purchase order contract award was only 12 percent the level of a delivery order award. Given that WOSBs favored purchase orders more so than non-WOSBs, this facilitated a lower level of award compared to non-WOSBs. (**Chapter 8**)
- Analysis of the “extent competed” variable indicates that a higher percentage of WOSB contract awards occur under some level of competition than the rest of the general population. (**Chapter 8**)

The WOSB FCP has been in effect for a little over two years, providing a limited timeline to fully assess the efficacy of the program. While we could not conclude definitively the program was working as intended, many of our data analyses and observations indicate that the WOSB FCP has led to an increased share of contracts and dollar awards won by WOSBs, including contracts and awards won by WOSBs who had not previously won a Federal prime contract. Given the limited procurement history associated with the WOSB FCP, we believe a longer procurement time series history will allow a more robust assessment of the efficacy of the WOSB FCP.

Chapter 2. Introduction

Demographic, economic and business data highlight the growing importance of Women-Owned Businesses (WOBs), including Women-Owned Small Businesses (WOSBs), in the U.S. economy:

- Since 1970, the number of women in the workforce has more than doubled, with women comprising 49.3 percent of the workforce in 2012.²
- The number of women-owned businesses increased 59 percent between 1997 and 2013, well above the national average of 41 percent for overall new business growth for the same time period.³
- U.S. Census Bureau data from the 2007 Survey of Business Owners (SBO) indicate that 28.7 percent of all U.S. businesses were women-owned, 7.8 million of which were WOSBs.⁴
- Between 1997 and 2007, women-owned businesses created 500,000 jobs while other privately-held firms lost jobs.⁵

Despite the growing presence of WOSBs in the U.S. economy, parity issues exist when comparing WOSB business performance trends and non-WOSB business performance trends. One such area is WOSB involvement in Federal procurement, in which there has been a historical disparity between the number and dollar value of Federal prime contracts awarded to WOSBs compared to non-WOSBs. Inequity in contracts and awards for WOSBs is not a new phenomenon, as the legislative history illustrates multiple efforts to increase the participation and award of Federal procurement contracts and dollars to WOSBs. While the focus of this research involves the WOSB Federal Contract Program (WOSB FCP), legislative history involving WOSB procurement issues dates back almost two decades. Two major legislative efforts leading up to the WOSB FCP include:

- *Women-Owned Business Contracting Program (1994)* required the Federal government to award 5 percent of its prime contracts to businesses certified as women-owned in an effort to reduce the contract award disparity.⁶

² “What American Women Do For Work,” NPR, May 3, 2012. <http://www.npr.org/blogs/money/2012/05/03/151282913/what-america-s-women-do-for-work>

³ American Express OPEN, “The American Express OPEN State of Women-Owned Businesses Report: a summary of important trends, 1997-2013,” at p. 2.

⁴ See <http://www.nwbc.gov/facts/women-owned-businesses> for additional details regarding WOSB statistics derived from the 2007 SBO.

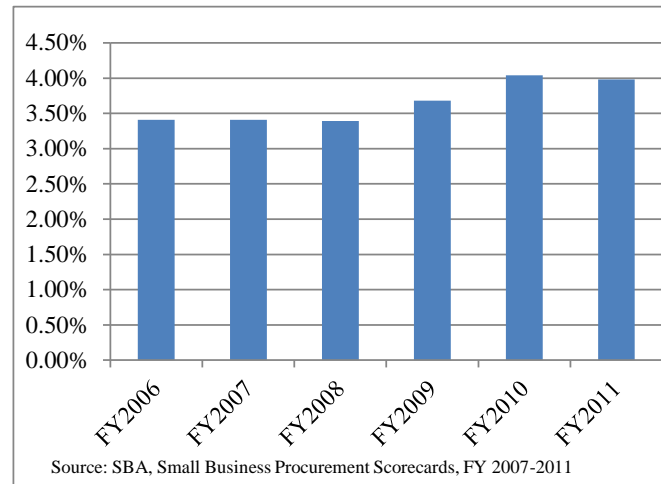
⁵ U.S. Department of Commerce, “Women-owned Businesses in the 21st Century,” Economics and Statistics Administration, October 2010. <http://www.esa.doc.gov/Reports/women-owned-businesses-21st-century>

⁶ U.S. Department of Health and Human Services, “Chapter 10: Women Owned Small Business Program.” <http://www.hhs.gov/about/smallbusiness/Small%20Business%20Program%20Manual/chapter10.html>. However, the principal mechanism for encouraging WOSB participation largely resided with the judgment of contracting officers to pursue restricted competition, as opposed to specifically setting aside contracts for WOSBs. As a result, the legislation did not necessarily enforce the 5 percent standard by increasing the competitiveness of WOSBs in Federal procurement.

- *The Equity for Contracting for Women Act of 2000* provided the genesis of criteria included in the current WOSB FCP, including reiterating the 5 percent goal, the authority to set-aside contracts, the reasonable expectation of two or more bids, isolation of specific industries where WOSBs are underrepresented with respect to Federal procurement contracting, and caps associated with potential awards.⁷

The Federal government has made progress since then towards reaching the 5 percent procurement goal, but has failed to meet the WOSB 5 percent distribution mark, as shown in Table 1-1.

Figure 1-1
Percent of Total Federal Prime Contract Dollars Awarded to WOSBs



The WOSB FCP aims to reduce the inequity in award and distribution of prime Federal contracts to WOSBs. In 2011, the Small Business Administration published the final rule for the WOSB FCP. With an effective date of February 4, 2011, more than ten years elapsed since the initial passing of the legislation before its implementation. Nevertheless, the WOSB FCP includes policies designed to promote WOSB Federal procurement activity, such that WOSBs procure at least 5 percent of total prime Federal contracts in a given year. The principal mechanisms available to increase WOSB participation in Federal procurement are set-asides, in which contracting agencies set aside certain Federal contracts specifically for WOSBs in an effort to reach the 5 percent contracting objective.

Awarding agencies can designate contracts for WOSBs based on three criteria. First, the NAICS industry identification code assigned to the contract must represent an industry in which WOSBs are underrepresented or substantially underrepresented. Second, the “rule of two” states that the contract provider must have firm reason to believe that at least two WOSBs will submit an offer/quote. Finally, as originally enacted, the WOSB FCP included provisions that the

⁷ H.R. 4897 (106th): Equity in Contracting for Women Act of 2000, available at <http://www.govtrack.us/congress/bills/106/hr4897/text>

anticipated award price including options could not exceed statutory thresholds of \$6.5M for manufacturing or \$4M for other contracts. However, the FY13 National Defense Authorization Act, effective January 2, 2013, lifted these thresholds on WOSB designated contracts.

In light of the continued disparity in Federal procurement award levels between WOSBs and their non-WOSB counterparts, Congress enacted a two-pronged system to determine underrepresentation, which considers both the number of contracts awarded to WOSBs as a portion of the total, and the award amount of those contracts. The two-pronged system prevents contracts with large awards from satisfying the 5 percent Federal mark. However, industries and agencies have little incentive to award 5 percent of all contracts to WOSBs. There are no repercussions for missing the goal, and no rewards for success in the program. Congress set the 5 percent goal almost 20 years ago, and the Federal government has struggled to meet the objective on a consistent basis. Interestingly, despite underrepresentation in prime Federal contracting, the WOSB share of Federal subcontracting met the 5 percent threshold and was 6.10 percent in 2011, according to the SBA Scorecards.⁸

The legislative history has generated a number of studies designed to test the effectiveness of the legislation and to help refine subsequent legislative efforts. Key areas of research include understanding the level of underrepresentation of WOSBs in Federal procurement, as well as highlighting some of the reasons why WOSBs might be underrepresented. In 2007 Kauffman-RAND investigated the role of WOSBs in the prime Federal contract market.⁹ This study indicated that WOSBs were underrepresented in terms of both contract number and award amount, despite previous efforts to increase WOSB participation in Federal procurement. Despite parity issues, Federal procurement remains an important focus for many WOSBs. The National Association of Women Business Owners' January 2010 survey measured the importance of selected issues to women business owners. Women business owners cited "gaining access to Federal contract opportunities" as either very important or extremely important 44 percent of the time, compared with 29 percent in 2008.¹⁰

Recognition of the disparity in Federal procurement between WOSBs and non-WOSBs has led to several joint efforts designed to encourage WOSB participation in Federal procurement. In 2008, Women Impacting Public Policy (WIPP) and American Express OPEN partnered to educate women business owners about Federal procurement and facilitate women-owned business participation in Federal contracting. The "Give Me 5" program provides resources to women business owners as a means to reach the 5 percent legislative mandate for

⁸ SBA Scorecards, 2007, 2008, 2009, 2010, 2011. While our research focus remains prime contracting, we note that subcontracting is another potential research area for assessing WOSB participation in Federal procurement.

⁹ N. Moore, , N. Nicosia, , E. Reardon, Kauffman-RAND Institute for Entrepreneurship Public Policy, "The Utilization of Women-owned Small Businesses in Federal Contracting," 2007. http://www.rand.org/pubs/technical_reports/2007/RAND_TR442.pdf.

¹⁰ National Association of Women Business Owners, "NAWBO 2010 Issues Survey, January 2010 Question Results." <http://nawbo.org/imageuploads/NAWBO2010IssuesSurveyResults.pdf>

WOSB participation in prime Federal contracting.¹¹ In 2013, a collaborative partnership between the SBA, WIPP, and American Express OPEN launched the “ChallengeHER” program, which represented an evolution of the successful “Give Me 5” program.¹² This program offers women small business owners mentoring programs, online training curriculum, and access to live events featuring government buyers across the United States. ChallengeHER also calls for women entrepreneurs to promote their innovative ideas and products to the government in an effort to earn more than \$1 million in annual revenues.¹³

Unfortunately, in terms of revenues, the percentage of women-owned businesses in the top echelon has remained stagnant for over fourteen years, despite the fact that women-owned small businesses have grown as a share of the American economy in terms of both revenue and number of employees. In 1997, 1.8 percent of women-owned businesses had revenues in excess of \$1 million. Today, although the total number of WOBs has increased, the percentage of \$1 million businesses remains unchanged.¹⁴ Additionally, average receipts of women-owned firms are significantly lower than those of their male-owned counterparts.¹⁵ An NWBC analysis indicates that this inequity is partially due to the industries in which MOBs and WOBs most often participate.¹⁶ That is, the industries in which WOBs typically engage have lower overall receipts, regardless of firm ownership,¹⁷ which corroborates findings from the 2007 Kauffman-Rand Study, which specifically reviewed WOSB procurement trends across industries.¹⁸

Our research builds upon the prior economic studies and statistics to develop an increased understanding of the impact of legislation on WOSB procurement trends. In the remainder of this report, we discuss our research methodology and findings.

¹¹ “WIPP’s Give Me 5 and American Express OPEN aid small woman-owned businesses,” Examiner.com, October 17, 2010. <http://www.examiner.com/article/wipp-s-give-me-5-and-american-express-open-aid-small-woman-owned-businesses>

¹² Lourdes Martin-Rosa, “ChallengeHER gives women-owned small businesses an extra boost in 2013.” http://govwin.com/lourdes_blog/challengeher-gives-womenowned-small-businesses/850668

¹³ American Express OPEN, “SBA, WIPP and American Express OPEN launch new program to close the gap in women contracting,” April 23, 2013. <http://about.americanexpress.com/news/pr/2013/challengeher-open-women-contracting.aspx>

¹⁴ Ibid.

¹⁵ Results from the 2007 U.S. Census Bureau SBO indicate that for employer-firms, average receipts for WOBs were approximately \$1.2 million compared to \$2.5 million for MOBs. With respect to non-employer firms, average receipts for WOBs were approximately \$26.5 thousand, compared with \$53.4 thousand for MOBs. Data available at http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=SBO_2007_00CSA05&prodType=table

¹⁶ National Women’s Business Council, “New Data Analysis Shows Women-Owned Business Thriving, But Still Facing Obstacles,” June 2013. <http://www.nwbc.gov/sites/default/files/Women%20in%20Business%202007-2010.pdf>

¹⁷ National Women’s Business Council (NWBC), “Women-Owned Firms in the U.S.,” January 2012. <http://www.nwbc.gov/sites/default/files/NWBC%20Final%20Narrative%20Report.pdf>

¹⁸ Kauffman-RAND, op. cit.

Chapter 3. Research Design and Methodology

Our analysis focused on evaluating whether the WOSB FCP affected the participation of and awards granted to women-owned small businesses. As an initial matter, we evaluated overall WOSB Federal procurement trends on an annual basis from 2000 through the present.¹⁹ This analysis allowed us to compare WOSB procurement trends prior, and subsequent, to the enactment of the WOSB FCP in February 2011. Primary research questions included:

- Are WOSBs meeting procurement thresholds of 5 percent (in both contract number and dollar amount) of total Federal prime contracting awards since the implementation of the WOSB FCP rules in 2011?
- How do the more recent procurement data compare with periods prior to the implementation of the WOSB FCP?
- Do the data indicate any potential gender gaps within overall procurement activity?
- Do we observe any vendor-specific trends within WOSB Federal procurement activity between 2000 and the present, including any explained by the implementation of the WOSB FCP or use of set-asides? Do we observe more recent trends with respect to the use of WOSB and EDWOSB set-asides?
- Given that the WOSB FCP and prior legislation focused on 83 NAICS²⁰ industries where WOSBs were either underrepresented or substantially underrepresented, do we observe changes in WOSB procurement activity within these NAICS industries as a result of the WOSB FCP?
- Similarly, which government agencies are and are not meeting legislative goals for WOSB procurement activity? Do we observe trends in WOSB and general procurement among the agencies that are most successful versus those that fail to meet the 5 percent threshold?
- With respect to both NAICS and agency procurement trends, what role do set-asides, including those specific to the WOSB FCP, play in WOSB procurement activity?
- How does WOSB use of set-asides compare to non-WOSBs use of set-asides and what role, if any, do the use of WOSB and economically disadvantaged WOSB (“EDWOSB”) set-asides play in influencing WOSB use of other set-asides?

For our research design, we first obtained contract level Federal procurement data for each individual contract executed between 2000 and the present. We tabulated the data and,

¹⁹ We performed our analysis using an October 1 through September 30 fiscal year convention, consistent with the U.S. Government’s fiscal year. Any yearly or annual references in our quantitative analyses and results refer to the fiscal year.

²⁰ As mentioned previously, the NAICS is a standard classification system used by Federal agencies to collect and analyze business establishment data. NAICS codes are six-digit numbers, where the first two digits represent the major industrial sector, while the remaining digits signify with more specificity the nature of the business sector within the major industrial sector. In this report, we focus on the first four digits of the NAICS codes which provide a mid-level disaggregation by industry (but not the most detailed industrial information captured by the full six digit NAICS code).

when appropriate, performed statistical and graphical analysis to compare results for different subsets of data. We expected to use the Federal Procurement Data System – Next Generation (“FPDS-NG” or “FPDS”) for Federal procurement data from 2000 to the present.²¹ FPDS-NG contains hundreds of variables and descriptive characteristics for each contract action²² associated with a given procurement activity. A subsequent communication with the FPDS-NG support desk²³ personnel led us to obtain prime Federal procurement raw data files from USASpending.gov, a government web site which contains the FPDS-NG data but allows greater flexibility in downloading raw data files in various formats.²⁴ We subsequently downloaded all available prime Federal procurement contract action data from Fiscal Year 2000 through the present.²⁵ Each raw data file contained individual records, where each record represented a Federal procurement contract action. In addition, each record contained 213 distinct variables related to the particular contract action. For our analyses, we selected 30 variables for each contract action to accomplish our research objectives.

One of the key principles underlying our research was evaluating WOSB procurement in terms of contracts, as opposed to actions. This represented an important distinction, given that raw FPDS-NG data are recorded at the action level, and numerous government organizations rely on actions when reporting small business data, trends and analyses.²⁶ However, multiple actions can, and do, occur on the same contract for a particular vendor during the lifetime of a specific procurement contract. Over time, additional actions might be recorded to represent no-cost modifications (e.g., extending the due date or changing a vendor name), or alternatively to increase (e.g., additional funding on same contract) or decrease (e.g., close-out and “de-obligation” of remaining funds) the total contract value for a particular contract.²⁷ In our analyses, we focused on the total contract value for a specific contract, as opposed to assessing each contract action individually. To do so, we employed a contract “roll-up” process that

²¹ FPDS-NG is publicly available at <https://www.fpds.gov/fpdsng/cms/>, and includes a number of customized reports summarizing Federal procurement activity. Data are updated on a daily basis and FPDS-NG maintains a data history dating back to legacy transactions from as early as 1979.

²² “Contract action” means any oral or written action that results in the purchase, rent, or lease of supplies or equipment, services, or construction using appropriated dollars over the micro-purchase threshold, or modifications to these actions regardless of dollar value. Contract action does not include grants, cooperative agreements, other transactions, real property leases, requisitions from Federal stock, training authorizations, or other non-FAR based transactions. (http://www.acquisition.gov/far/html/Subpart%204_6.html)

²³ Email communication with FPDS-NG Support Desk, October 11, 2012.

²⁴ We were able to download complete raw Federal procurement data on prime contract actions in comma-separated-value (“csv”) file formats for each fiscal year from 2000 through the present.

²⁵ For the purposes of our analyses, we downloaded fiscal year 2013 data as of March 6, 2013. As a result, our analyses do not include any data additions after March 6, 2013. In addition, Department of Defense procurement activity is subject to a 90 day delay in public reporting due to national security concerns. Finally, USASpending.gov allows downloading procurement data on a state by state basis to maintain more manageable data files. However, data for Oregon were not available at the time we downloaded procurement data. We alerted FPDS-NG and the USASpending.gov data desk of this bug in October 2012. However, USASpending did not correct this bug until the release of a March 29, 2013 service pack. As a result, we do not include Oregon data in our analyses.

²⁶ For example, the Small Business Goaling Reports provide scorecards on Federal procurement activity across different agencies based on select business characteristics.

²⁷ In addition, these multiple contract actions might occur in different fiscal years.

consolidated multiple contract actions occurring on a single contract into a single contract database record.

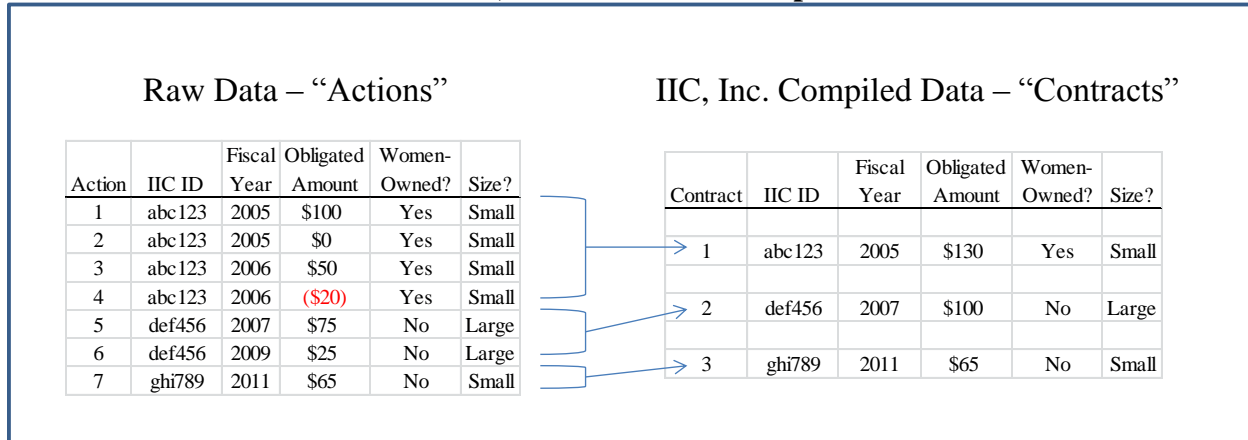
The contract roll-up was a multi-step process designed to isolate individual contracts and subsequently aggregate the total contract value by summing obligated amounts on each action associated with a contract. In order to isolate specific contracts, we examined a combination of three variables included in each contract action.²⁸ The first variable was the DUNS number, which is a unique nine-digit number that identifies a particular vendor registered in the System for Award Management (“SAM”). Over time, the Federal government has combined and streamlined its vendor information system. The current system, SAM, requires each vendor to register in order to contract with the government. Further, each vendor’s business size, ownership type (e.g., women-owned), and other variables are stored. SAM (and its immediate predecessor registry, the Central Contractor Registry (CCR)) marks an improvement over previous registry systems as it stores all vendor information in a central repository, which decreases the risk of incorrect or mismatched data between databases. To that end, SAM has streamlined the procurement process, as vendors and contracting officers are only required to enter contract information in a single database, decreasing the risk for errors. However, SAM was not operational until recently.²⁹

The second variable was the Procurement Instrument Identifier (“PIID”), which is a unique identifier for each procurement contract, agreement or order. Lastly, we included the Indefinite Delivery Vehicle PIID (“IDV PIID”), given that certain contract actions used the PIID as a contract-controlling identifier, while other contract actions used the IDV PIID as the contract-controlling identifier. We subsequently created a unique contract identifier (“IIC ID”) which represented a combination of DUNS, PIID and IDV PIID variables. Each procurement action in our raw data files had an IIC ID, which facilitated our contract roll-up. Figure 3-1 illustrates our contract roll-up process. In this hypothetical example, IIC ID “abc123” represents one contract for a specific WOSB with DUNS number “123.” There are four actions associated with this contract, each with a different obligated amount. Likewise, IIC ID “def456” represents a separate and distinct contract for a different vendor, but with only two actions.

²⁸ See http://www.usaspending.gov/sites/all/themes/usaspendingv2/Archives_Data_Feeds_Data_Dictionary.pdf for a detailed description of specific FPDS variables.

²⁹ For more information about SAM, please visit <https://www.sam.gov/portal/public/SAM/>.

Figure 3-1
IIC, Inc. Contract Roll Up



The contract roll-up defines the obligated amount as the sum of all action amounts with identical IIC ID numbers. In Figure 3-1, the total contract value for the IIC ID “abc123” is \$130, which represents the sum of the four separate actions which roll-up to this IIC ID. The contract roll-up also defines the fiscal year and all other contract variables by relying on values contained in the earliest record (i.e., the first observable action in the raw underlying FPDS data). For example, the contract “abc123” records all amounts as of FY 2005, the year of the first observed contract action. An important caveat to our contract roll-up is the fact that (a) data obtained from the early years may be missing pre-fiscal year 2000 data and (b) more recent contracts will not reflect the propensity for additional modifications and changes in total contract value to occur after March 2013.

Once we assigned each data record an IIC ID, we used MySQL to perform the contract roll-up and create customized data sets of Federal procurement contracts by fiscal year.³⁰ We did not modify or change any entries in the underlying data set. As a result, we were accepting the initial raw data “as-is” despite the presence of a number of different data gaps. The two major categories of data gaps included:

- Missing or blank entries;
- Miscoded entries (e.g., contracting personnel incorrectly entering size classifications, NAICS, agency or amount)

We eliminated contracts with blank or missing entries for specific analyses (i.e., if the business size was missing, we did not include that record or attempt to infer what the size should

³⁰ We used Microsoft Excel to initially format and add the IIC ID to the comma-separate-value files obtained from USASpending.gov. We subsequently used MySQL, an open source database program, to upload the data files and perform the contract roll-up through custom queries and scripts. We subsequently saved our results in a contract table for further querying and statistical analysis. Microsoft Excel has a one million row computational limit and was therefore, not adequate for our contract roll-up process. MySQL has no computational limits making it better suited to this large data set.

have been). We could not control for miscoded entries that were not readily identifiable and accepted these data and records as entered into FPDS-NG. Lastly, to increase comparability of this study with the manner in which certain governmental agencies, including the Small Business Administration (SBA), analyze small business procurement performance, we applied SBA's Exclusion process to our contract data. The SBA excludes certain procurement categories from the overall population of procurement data when measuring small business procurement performance; for example, SBA excludes procurement funded by a foreign entity.³¹ Once we had compiled our contract-level dataset, we performed our analyses using MySQL queries and statistical analyses and Microsoft Excel computation analysis on subsets of data exported from MySQL.

The bulk of our research design and methodology focused on isolating WOSB Federal procurement activity and comparing the results and trends to those of non-WOSB entities. As a result, it was important for us to use a uniform and consistent definition of WOSBs in our data analysis. In the FPDS-NG data,³² there are separate women-owned and business size flags for every action. In performing our analyses, we used the combination of these two variables to classify the different business types: women-owned small business ("WOSB"), non-women-owned³³ small businesses ("OtherSB"), women-owned large business ("WOLB"), and non-women-owned large business ("OtherLB"). Collectively, we refer to any entities that are not specifically WOSBs as "non-WOSBs." Per our contract roll-up, we determined business type for a particular vendor on a contract by the earliest observed action on a particular contract. In the event that a particular contract was missing an entry for either the "women-owned" flag or size determination variable, we excluded that contract from our analysis.

Once we controlled for observable data gaps, we were able to refine and implement our research design and methodology. We tested the initial hypothesis that the implementation of the WOSB FCP led to an increase in Federal procurement activity for WOSBs at the contract-level, when comparing procurement levels prior, and subsequent, to the implementation of the program. We performed a quantitative time-series analysis of WOSB procurement activity (in terms of number of contracts and dollar values) specific to NAICS designations and agencies, and compared these results to analogous analyses for non-WOSBs. Our research included graphical and tabular analysis of the number of women-owned small businesses securing prime Federal contracts in the 83 designated underrepresented NAICS industries, the number of

³¹ https://www.fpds.gov/Reports/manage/html/preview_Small_Business_Goaling_Report.html

³² An important point is that until 2004, there was no distinction between women-owned businesses and WOSBs. By defining WOSBs as businesses that are both small and woman-owned, we attempt to circumvent potential differences in business type classification over time. However, we recognize that the size determination is made at a contracting officer-level. We observed instances where a particular vendor might have been classified as small under a contract for one agency, but classified as large by a separate contracting officer with respect to a contract for a different agency. We accepted the data "as-is" and did not adjust any size classification differences that might arise across different agencies or industrial sectors.

³³ For clarification, we are including firms with equal men/women ownership and women-minority-ownership in the "Other" small business category.

women-owned small businesses securing contracts per agency, and investigation into the distribution and utility of set-asides, particularly the WOSB and EDWOSB set-asides that arose from the WOSB FCP.

The remainder of this research report focuses on addressing the primary research objectives. We include relevant summary tables supporting our principal observations and conclusions. These summary tables do not represent the full scope of the analytical detail we investigated throughout our research. We refer the reader to our complementary “Data Book” which contains additional and more detailed analyses related to our investigation into WOSB Federal procurement, with a particular focus on the WOSB FCP. Finally, in our research design and methodology we focus solely on the Federal procurement data obtained from FPDS-NG to analyze procurement trends. Nevertheless, a large number of other variables will have an effect on procurement performance, most notably, industry-specific data that the FPDS-NG data do not capture. For example, a decline in WOSB procurement for a specific industry may be less a result of changes in procurement opportunities, but a response to industry-specific events that might lead to a shift in WOSB procurement behavior within that industry. We caution the reader that we do not include these industry factors in our analyses.

Chapter 4. WOSB General Procurement Trends

In this chapter we describe patterns of women-owned small business (WOSB) procurement over the past 14 fiscal years, specifically focusing on comparisons of contract-based procurement trends with non-women-owned other small businesses (“OtherSBs”) and large businesses (collectively, “non-WOSBs”). Our results provide a comparative basis for assessing whether women-owned small businesses are increasing their number and dollar share of Federal prime contracts over the past 14 fiscal years compared with non-WOSBs. Consistent with our contract roll-up methodology, we capture the total dollar amount relative to the fiscal year where we first observe a new contract activity. As a result, the total dollar amounts are skewed toward the earlier fiscal years for two reasons. First, in all likelihood, there are dollar amounts that we record in FY2000 that actually pertain to contracts initially executed prior to FY2000. As a result, we technically overstate the amount of contracts and dollars in FY2000 to the extent these amounts are associated with contracts entered into prior to FY2000. Second, similar reasoning leads us to conclude that contracts appearing in the later fiscal years do not benefit from potential additional funding that might be added post-FY2012.

Table 4-1 summarizes the total contracts and dollar values included in our analysis of Federal procurement data from FY2000 through the present. Given that many governmental agencies rely on transaction “actions” as the baseline for assessing procurement, we also include comparable data for actions to show that while there are differences between results for contracts versus actions, the general time-series trends are comparable.

Table 4-1³⁴
General Procurement Trends (Contracts and Dollars) FY2000-FY2013

Year	IIC, Inc. Contract Analysis						IIC, Inc. Actions Analysis					
	WOSB Contracts	Total Contracts	WOSB Contract %	WOSB Dollars (\$m)	Total Dollars (\$m)	WOSB Dollars %	WOSB Actions	Total Actions	WOSB Action %	WOSB Dollars (\$m)	Total Dollars (\$m)	WOSB Dollars %
	(a)	(b)	(c) = (a)/(b)	(d)	(e)	(f) = (d)/(e)	(g)	(h)	(i) = (g)/(h)	(j)	(k)	(l) = (j)/(k)
2000	24,112	388,152	6.2%	\$ 7,521	\$ 566,301	1.3%	31,680	518,911	6.1%	\$ 4,131	\$ 179,908	2.3%
2001	25,167	388,403	6.5%	\$ 5,680	\$ 245,948	2.3%	36,747	567,172	6.5%	\$ 5,014	\$ 200,466	2.5%
2002	35,988	494,575	7.3%	\$ 7,091	\$ 305,609	2.3%	52,292	730,576	7.2%	\$ 6,354	\$ 236,435	2.7%
2003	57,292	705,026	8.1%	\$ 8,296	\$ 288,938	2.9%	79,589	1,000,388	8.0%	\$ 7,898	\$ 276,549	2.9%
2004	140,735	1,286,431	10.9%	\$ 9,238	\$ 331,367	2.8%	172,703	1,687,077	10.2%	\$ 8,156	\$ 290,267	2.8%
2005	194,779	1,930,971	10.1%	\$ 10,987	\$ 338,478	3.2%	243,933	2,518,787	9.7%	\$ 9,925	\$ 320,468	3.1%
2006	268,095	2,700,106	9.9%	\$ 12,487	\$ 389,706	3.2%	328,499	3,334,485	9.9%	\$ 11,365	\$ 351,514	3.2%
2007	269,672	2,859,971	9.4%	\$ 13,768	\$ 349,935	3.9%	343,711	3,600,301	9.5%	\$ 12,785	\$ 385,628	3.3%
2008	285,126	3,131,893	9.1%	\$ 15,393	\$ 413,798	3.7%	365,938	3,942,332	9.3%	\$ 14,419	\$ 449,148	3.2%
2009	209,180	2,014,588	10.4%	\$ 15,301	\$ 381,806	4.0%	302,556	2,896,843	10.4%	\$ 15,798	\$ 442,956	3.6%
2010	203,493	1,929,152	10.5%	\$ 16,150	\$ 326,431	4.9%	308,828	2,890,873	10.7%	\$ 17,101	\$ 433,002	3.9%
2011	188,411	1,729,578	10.9%	\$ 14,054	\$ 287,049	4.9%	301,701	2,762,220	10.9%	\$ 16,684	\$ 423,481	3.9%
2012	182,791	1,593,121	11.5%	\$ 11,509	\$ 217,780	5.3%	293,668	2,586,298	11.4%	\$ 16,160	\$ 403,629	4.0%
2013	24,534	251,642	9.7%	\$ 1,244	\$ 28,345	4.4%	54,614	498,956	10.9%	\$ 2,684	\$ 77,985	3.4%
Total	2,109,375	21,403,609	9.9%	\$148,719	\$4,471,481	3.3%	2,916,459	29,535,219	9.9%	\$148,475	\$4,471,436	3.3%

With respect to procurement activity, WOSBs generally exhibit a positive, upward trend in both the number of contracts awarded as a percentage of the total contracts awarded, as well as the total dollar value awarded as a percent of the total dollars awarded. Despite a slight decline in the proportionate share of contracts and dollars in FY2008, the proportion of WOSB contracts almost doubled between FY2000 and FY2012, while the proportionate share of contract dollars increased from 1.3 percent to a peak of 5.3 percent in FY2012. We observe similar trends when analyzing actions, absent the contract roll-up, although more recent results indicate WOSBs receive a lower proportion of dollars associated with actions compared to contracts. Nevertheless, the time-series results for WOSB contract and dollar proportions are highly correlated.³⁵

Figure 4-1 further segments contract data results by business type.³⁶ The results contrast the contracts and dollars for WOSBs with those of OtherSBs and all large businesses. We observe a relatively uniform split between OtherSB contracts and large business contracts between FY2000 and FY2012, while WOSB contracts represent the smallest fraction. However,

³⁴ The difference in total dollar values between the IIC, Inc. Contract Analysis (\$4,471,481 million) and total dollar values in the IIC, Inc. Actions Analysis (\$4,471,436 million) is a function of data gaps that arise when rolling up actions which might have a data gap that is controlled for in our contract roll-up. For example, on a given IIC ID, there may be multiple actions. If one of those actions has a data gap, it is still rolled-up to the contract level and its value is included in the contract. However, for actions, any line item with a data gap is removed from the analysis.

³⁵ Correlation coefficients measure the linear dependence between two sets of data, with a value that ranges between -1 and +1. Coefficients closer to +1 represent two data series that “move” together. The correlation coefficients between data series for contracts and actions proportions for contracts/actions and dollars are 0.97 and 0.98, respectively, indicating the results of our contract viewpoint and actions viewpoint are highly correlated. In contrast, the correlation coefficient for the total contract dollars and total action dollars data sets is 0.34, which highlights the impact of the contract roll-up and assignment of action dollars, regardless of fiscal year, into the first fiscal year associated with a specific contract.

³⁶ Recall we use the term “business type” to refer to the combination of gender ownership and size.

we note that large businesses account for the vast majority of contract dollars; the right panel of Figure 4-1 captures the fact that large businesses receive a disproportionately large share of contract dollars.

Figure 4-1
Summary of Contracts and Awards by Business Type



Figure 4-1 also illustrates increasing WOSB representation in terms of contracts and awards among small businesses within the general pool of total contracts and awards. Specifically, WOSBs have steadily increased the number and dollar amount of awards as a proportion of total small business contracts and dollars awarded from FY2000 to the present. Table 4-2 provides these data for the subset of small businesses securing Federal prime contracts between FY2000 and the present.

Table 4-2
Small Business Procurement Metrics

Year	WOSB Contracts (a)	Total SB Contracts (b)	WOSB Contract % (c) = (a)/(b)	WOSB Dollars (\$m) (d)	Total SB Dollars (\$m) (e)	WOSB Dollars % (f) = (d)/(e)
2000	24,112	185,291	13.0%	\$ 7,521	\$ 58,758	12.8%
2001	25,167	188,111	13.4%	\$ 5,680	\$ 46,287	12.3%
2002	35,988	247,946	14.5%	\$ 7,091	\$ 55,309	12.8%
2003	57,292	376,401	15.2%	\$ 8,296	\$ 59,883	13.9%
2004	140,735	785,447	17.9%	\$ 9,238	\$ 67,438	13.7%
2005	194,779	1,072,111	18.2%	\$ 10,987	\$ 79,449	13.8%
2006	268,095	1,598,282	16.8%	\$ 12,487	\$ 80,464	15.5%
2007	269,672	1,500,261	18.0%	\$ 13,768	\$ 82,038	16.8%
2008	285,126	1,590,284	17.9%	\$ 15,393	\$ 90,539	17.0%
2009	209,180	1,026,223	20.4%	\$ 15,301	\$ 89,877	17.0%
2010	203,493	998,840	20.4%	\$ 16,150	\$ 90,424	17.9%
2011	188,411	917,931	20.5%	\$ 14,054	\$ 76,610	18.3%
2012	182,791	860,553	21.2%	\$ 11,509	\$ 65,827	17.5%
2013	24,534	119,799	20.5%	\$ 1,244	\$ 7,546	16.5%
Total	2,109,375	11,467,480	18.4%	\$ 148,719	\$ 950,450	15.6%

Cross-comparison of Tables 4-1 and 4-2 illustrates that WOSBs are increasing the share of contracts and dollars through a redistribution of contracts and awards compared to other businesses (with the exception of FY2012 and FY2013 partial data). This is an intuitive result, given the potential for significant barriers facing WOSBs that seek to compete for contracts typically won by large (and mostly male-owned) businesses. Nevertheless, the results indicate that even in the small business procurement pool, WOSBs tend to receive smaller total awards than their other small businesses counterparts. Table 4-3 presents a summary of average contract awards by select business types on a time-series basis. The results indicate several general procurement trends, including a rapidly decreasing average contract value over time, which reflects the general procurement trend towards an increase in total contract awards, but at smaller dollar levels. In addition, we note that WOSBs have become more competitive, as we observe a greater long-term increase in the average WOSB award than the total award (shown in column (e) of Table 4-3).

Table 4-3
Average Procurement Award (per Contract) Analysis

Year	WOSB	Total	Total Average		WOSB %			WOSB Avg
	Average	Average	Award	OtherSB	WOSB %	Non-	OtherSB	Award/OtherSB
	Award	Award	(excluding	Average	Total	WOSB	% Total	Avg Award
	(a)	(b)	WOSBs)	Award	(e) = (a)/(b)	(f) = (a)/(c)	(g) = (d)/(b)	(h) = (a)/(d)
	(a)	(b)	(c)	(d)	(e) = (a)/(b)	(f) = (a)/(c)	(g) = (d)/(b)	(h) = (a)/(d)
2000	\$311,907	\$1,458,966	\$ 1,534,941	\$317,889	21.4%	20.3%	21.8%	0.98
2001	\$225,705	\$ 633,230	\$ 661,466	\$249,204	35.6%	34.1%	39.4%	0.91
2002	\$197,040	\$ 617,922	\$ 650,951	\$227,490	31.9%	30.3%	36.8%	0.87
2003	\$144,808	\$ 409,812	\$ 433,252	\$161,659	35.3%	33.4%	39.4%	0.90
2004	\$ 65,639	\$ 257,586	\$ 281,165	\$ 90,274	25.5%	23.3%	35.0%	0.73
2005	\$ 56,406	\$ 175,289	\$ 188,626	\$ 78,034	32.2%	29.9%	44.5%	0.72
2006	\$ 46,578	\$ 144,330	\$ 155,106	\$ 51,103	32.3%	30.0%	35.4%	0.91
2007	\$ 51,053	\$ 122,356	\$ 129,779	\$ 55,478	41.7%	39.3%	45.3%	0.92
2008	\$ 53,986	\$ 132,124	\$ 139,950	\$ 57,576	40.9%	38.6%	43.6%	0.94
2009	\$ 73,149	\$ 189,521	\$ 203,004	\$ 91,275	38.6%	36.0%	48.2%	0.80
2010	\$ 79,366	\$ 169,209	\$ 179,804	\$ 93,385	46.9%	44.1%	55.2%	0.85
2011	\$ 74,591	\$ 165,965	\$ 177,136	\$ 85,749	44.9%	42.1%	51.7%	0.87
2012	\$ 62,964	\$ 136,700	\$ 146,257	\$ 80,143	46.1%	43.1%	58.6%	0.79
2013	\$ 50,698	\$ 112,641	\$ 119,332	\$ 66,158	45.0%	42.5%	58.7%	0.77

Despite an increase in the average WOSB contract award amount compared to the total pool, we observe the potential for an increasing “gender gap” within the small business pool, as shown in column (h) of Table 4-3. Specifically, the ratio of the average WOSB contract award to the average other small business contract award has declined in recent years. As a result, WOSBs are not only receiving lower average awards than their other small business counterparts, but the spread between WOSB and other small business awards widened between FY2011 and FY2012, falling from the recent peak of 0.94 in FY2008. Several explanations exist for why WOSBs receive a lower average award than other small businesses. Most notably,

results from the recent Census Bureau 2007 Survey of Business Owners (SBO) indicate that men-owned businesses typically have 50 percent more employees than women-owned businesses.³⁷ In addition, men-owned small businesses, on average, have annual receipts twice as great as those of comparable WOSBs.³⁸ Given these size disparities, it is reasonable to expect a difference in average awards between men-owned small businesses and WOSBs. As a result, it may be that WOSBs' smaller size relative to other small businesses explains their lower awards in Federal procurement. Of course, the causality is debatable, given that the failure to obtain higher Federal procurement awards might also contribute to the difference in size and receipts for WOSBs versus other small businesses, notably men-owned small businesses.

Analysis of average awards provides general information, but does not shed light on the potential distribution of awards by business type. In fact, Figure 4-2 illustrates varying trends in analyzing the ratio of WOSB awards to other small business awards over time for different statistical measures. Specifically, analysis of OtherSBs procurement indicates the presence of several large awards, which skew the average contract award. In contrast, the inferred gender gap narrows when comparing median, lower quartile and upper quartile contract award amounts for WOSBs compared to OtherSBs over time.³⁹ More comprehensive analysis of procurement statistics indicate that OtherSB contract awards are subject to a higher level of volatility than those of WOSBs, indicating differences in the distribution of awards over time.⁴⁰

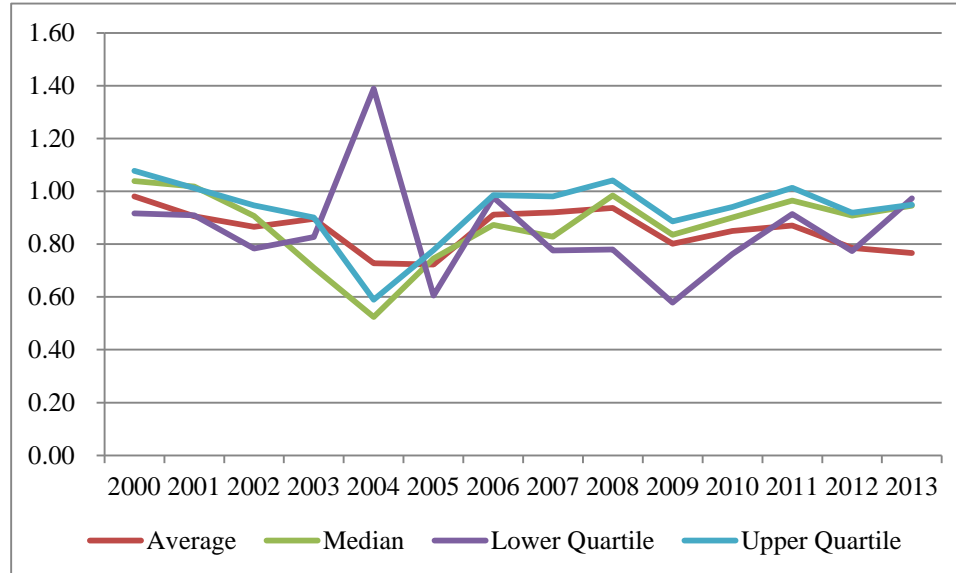
³⁷ 2007 Survey of Business Owners, U.S. Census bureau, data related to gender differences obtained from <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>. Data indicate that the average number of employees for men-owned businesses was 12.71 compared with 8.27 for women-owned businesses.

³⁸ Ibid. Data indicate that the average receipts for men-owned businesses with less than 500 employees were \$1.94 million, compared to only \$0.89 million for women-owned businesses with less than 500 employees.

³⁹ The lower quartile represents the dollar value at which 25 percent of contract dollar amounts are below this level. Conversely, the upper quartile represents the dollar value at which 25 percent of the contract dollar amounts are above this level.

⁴⁰ We measured volatility using the standard deviation of contract awards over time for WOSBs compared to OtherSBs, as well as looking at the coefficient of variation.

Figure 4-2
Ratio of WOSB Contract Statistics to OtherSB Contract Statistics



Analysis of WOSB Federal procurement trends at an aggregate level (i.e., without consideration of agency, industry or use of procurement tools such as set-asides) provides some general conclusions. We summarize our conclusions, with emphasis added for our most noteworthy conclusions and observations, as follows:

- ***WOSBs have typically increased the proportionate share of contracts awarded and dollars awarded year over year from FY2000 through FY2012.***
- FY2013 results are preliminary and represent only a fraction of what we expect will be the total Federal procurement opportunities in FY2013. Nevertheless, we observe a drop-off in the share of contracts won and dollars awarded in FY2013 compared to FY2012.⁴¹
- Large businesses capture a disproportionate share of total awards compared to the number of businesses and their contracts.
 - Generally, OtherSBs and large businesses capture equal proportions of contracts, with WOSBs securing fewer contracts overall.
- WOSBs have increased their number of contracts and total awards within the small business community since FY2000, largely due to a redistribution of contracts and awards involving non-WOSBs.
- ***Despite WOSB progress, average WOSB awards remain lower than those of OtherSBs.***
- There is a potentially increasing gender gap in terms of average awards among WOSBs and OtherSBs, although we believe differences in gender-based business characteristics

⁴¹ As stated previously, Department of Defense (DoD) procurement data are subject to a 90-day lag in public reporting for national security reasons. Our FY2013 results only incorporate DoD data uploaded to FPDS-NG through early December, which lessens the reliability of assessing FY2013 results, given we are still “missing” a significant number of contracts and awards.

(e.g., firm size and annual receipts) may influence the award disparities we observe between WOSBs and OtherSBs.

These observations lay the foundation for assessing the preliminary benefits and impact of the WOSB FCP. At face value, the general population results do not provide sufficient information to definitively conclude that the FCP was the driving factor behind the increase in WOSB Federal procurement activity in FY2012 compared to prior years. In fact, with only two years of procurement data subject to the WOSB FCP, we do not believe there are sufficient data to definitively measure or conclude the impact or efficacy of the WOSB FCP. However, the data do allow us to increase our knowledge of WOSB Federal procurement trends at a more disaggregated level to begin to analyze the effect of the WOSB FCP.

Chapter 5. Industry and Agency Analysis

Industry (NAICS)⁴² Analysis

IIC, Inc. performed an analysis of all NAICS codes in which WOSBs received prime Federal contracts during the procurement analysis time period, as well as an analysis of the 83 NAICS code subset of industries in which WOSBs are underrepresented or substantially underrepresented.⁴³ The key research questions we explore in this section are:

- How do the more recent procurement data, segmented by NAICS, compare with periods prior to the enactment of WOSB FCP legislation?
- Do the data indicate any potential gender gaps within WOSB procurement activity in specific industries?
- Given that the WOSB FCP and prior legislation focused on 83 NAICS industries where WOSBs were either underrepresented or significantly underrepresented, do we observe changes in WOSB procurement activity within these NAICS as a result of the WOSB FCP?

To address these industry issues, we analyzed the number of contracts awarded to WOSBs versus the total number of contracts awarded in each industry (NAICS), as defined by the NAICS variable included in the FPDS-NG data. We defined WOSB participation share as the number of WOSB contracts divided by the total number of contracts in each NAICS code. The WOSB FCP analyzes procurement activity with a two-pronged approach, considering both the number of contracts awarded, and the value of those awards. As a result, we performed a time-series analysis comparing the ratio of WOSB contracts to total contracts, as well as a time-series analysis comparing the ratio of WOSB dollars to total dollars by industry. During the research period, contracting officers used over 350 NAICS codes to identify the industries in which a given procurement action occurred. The “Data Book” contains the WOSB participation share in terms of both contracts and dollars for all industries and we only present below a sample of analyses pertaining to the largest NAICS in terms of total procurement regarding contract number and also contract dollars.⁴⁴ It is important to note that there are industry-specific factors

⁴² As stated earlier, NAICS stands for North American Industry Classification System. The official 2012 U.S. NAICS Manual has definitions for each industry as well as background information. <http://www.census.gov/eos/www/naics/>

⁴³ The Kauffman-RAND study determined industry classification (as substantially underrepresented or underrepresented) using a disparity ratio, calculated by comparing the utility of WOSBs in Federal contracts for a given NAICS industry code to the availability of contracts within that same given NAICS industry code. If the resulting ratio of the comparison is less than 0.5, the industry is considered substantially underrepresented. If the ratio of the comparison is between 0.5 and 0.8, the industry is considered underrepresented.

⁴⁴ The top-5 NAICS in terms of total contracts awarded may differ from the top-5 NAICS in terms of dollars awarded.

that may affect the fluctuations and distributions in contract awards, which represents a future area of research in evaluating industry-specific WOSB procurement trends.⁴⁵

Figure 5-1 presents a time-series analysis of the ratio of WOSB contracts and awards for the aggregate across the set of 83 identified NAICS codes versus the rest of the industry classifications. The left hand panel of Figure 5-1 indicates that WOSBs have increased the share of contracts won within the 83 designated NAICS codes at a higher rate than WOSB shares of contracts won in NAICS that do not fall within the set of 83 NAICS codes. Specifically, since the implementation of the WOSB FCP, the share of contracts won increased by 1 percent for WOSBs in the set of 83 when analyzing FY2010 (pre-implementation) with FY2012 (post-implementation). In contrast, the net increase was only 0.8 percent for contracts won by WOSBs in the other, non-designated industries. We observe similar results when analyzing award share, as shown in the right hand panel of Figure 5-1. In this case, award share increased by 0.5 percent for WOSB awards in one of the 83 designated NAICS codes, compared to 0.1 percent in the NAICS codes that were not designated.⁴⁶

Figure 5-1
Analysis of Procurement Statistics for 83 Designated NAICS versus Non-Designated NAICS

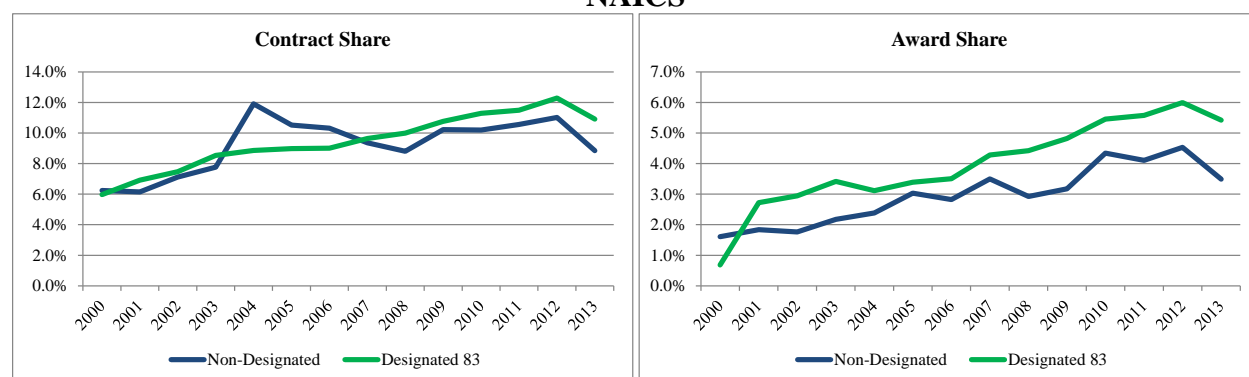


Figure 5-1 also illustrates that WOSBs have higher contract and award shares, at an aggregate level, within the 83 designated NAICS codes compared with the non-designated NAICS codes. Intuitively, one might expect the opposite, that WOSBs should have a lower share of contracts and awards in 83 designated NAICS prior to the enactment of the WOSB FCP, compared with the aggregate results for contracts and awards in NAICS codes where WOSBs were not underrepresented or substantially underrepresented. It is important to remember that the 83 designated NAICS codes rely on disparity ratios that measure not only level of contracts

⁴⁵ For the purposes of this report, we have implicitly assumed that industry factors affect small businesses equally, without respect to gender. Thus, the trends we observe in WOSB procurement are the result of competition against OtherSBs or large businesses under equivalent industry-specific economic conditions.

⁴⁶ We note that WOSB award share actually declined in the non-designated NAICS codes between FY2010 and FY2011 by 0.4 percent, such that the FY2011 to FY2012 difference was 0.4 percent. Nevertheless, the share of WOSB contracts and award amounts won has been greater in the 83 designated NAICS codes compared with the non-designated NAICS codes.

and awards won, but also data and assumptions concerning the prevalence of WOSBs within a particular NAICS code. As a result, there are numerous examples of NAICS where WOSBs are not underrepresented or substantially underrepresented, yet have very low shares of contracts or awards won. One example is NAICS 3364 (Aerospace Product and Parts Manufacturing), which accounted for almost 15 percent of *total* contract award amounts during the procurement analysis time period, yet WOSBs received only 0.5 percent of NAICS 3364 contract dollars.

The “Data Book” contains comprehensive data and scorecards for each NAICS investigated. However, for the purposes of this report, we include information on several NAICS codes as illustrative examples. For example, Figure 5-2 provides a comprehensive “scorecard” of procurement trends and activity for NAICS 3322, Cutlery and Tool Manufacturing. The largest number of contracts awarded to WOSBs during the procurement analysis time period was in NAICS 3322. Analysis of WOSB procurement activity within NAICS 3322 yields the following observations:

- This NAICS code represents the largest NAICS in terms of total contracts, with nearly 1.3 million contracts from FY2000-present.⁴⁷
- WOSB contract share doubled since FY2000 from 10 percent to 20 percent, and starting in 2011, the rate of WOSB contract share growth increased, coinciding with the implementation of the WOSB FCP.
- The WOSB awards share is volatile over the research period, but displays an overall increasing trend, quadrupling since FY2000.⁴⁸
- Within this NAICS code, WOSBs have a proportionately higher share of contract dollars available than the number of contracts, which is anomalous considering the inverse is true when examining general procurement trends.⁴⁹

⁴⁷ Although NAICS 3322 has the most contracts over the research period, the overall average value of those contracts is low compared to other industries.

⁴⁸ Some volatility may be due to the downturn of the economy during 2008 and 2009.

⁴⁹ Additional analysis indicates that of the approximately 350 NAICS with contract awards between FY2000 and FY2013, we typically observed that between 70 and 90 each fiscal year had results which indicated that the share of WOSB contract dollars was higher than the share of WOSB contracts. We observe similar trends within the subset of 83 designated NAICS, as between 12 and 21 of the 83 NAICS codes had awards shares in excess of the contract number share.

**Figure 5-2
NAICS 3322 Procurement Scorecard**

NAICS	3322							
Year	Total Contracts	Total Awards (Millions USD)	WOSB Contracts	WOSB Awards (Millions USD)	WOSB % Contracts	WOSB % Awards	Total Average Award	WOSB Average Award
2000	329	\$8.3	122	\$5.1	37.1%	62.3%	\$25,134	\$42,210
2001	503	\$25.2	53	\$3.6	10.5%	14.2%	\$50,129	\$67,787
2002	791	\$33.9	82	\$5.7	10.4%	16.8%	\$42,863	\$69,424
2003	16,895	\$137.2	2,176	\$36.2	12.9%	26.4%	\$8,118	\$16,647
2004	190,917	\$150.6	24,445	\$50.2	12.8%	33.4%	\$789	\$2,056
2005	170,657	\$179.4	25,949	\$50.9	15.2%	28.4%	\$1,051	\$1,961
2006	135,336	\$153.8	19,581	\$36.8	14.5%	23.9%	\$1,136	\$1,877
2007	137,909	\$307.8	22,766	\$148.5	16.5%	48.3%	\$2,232	\$6,524
2008	136,431	\$466.9	23,773	\$277.6	17.4%	59.4%	\$3,423	\$11,676
2009	131,559	\$289.3	22,327	\$98.3	17.0%	34.0%	\$2,199	\$4,403
2010	133,631	\$369.3	22,882	\$198.0	17.1%	53.6%	\$2,763	\$8,655
2011	131,911	\$235.4	20,784	\$102.0	15.8%	43.3%	\$1,785	\$4,908
2012	97,357	\$163.1	14,910	\$85.1	15.3%	52.1%	\$1,676	\$5,705
2013	969	\$24.0	193	\$14.4	19.9%	59.8%	\$24,759	\$74,384
Total	1,285,195	\$2,544.2	200,043	\$1,112.4	15.6%	43.7%	\$1,980	\$5,561

Year	Total Contracts with Set-Asides	Total Awards with Set-Asides (Millions USD)	WOSB Contracts with Set-Asides	WOSB Awards with Set-Asides (Millions USD)	WOSB % Set- Aside Contracts	WOSB % Set- Aside Awards	Total Average Award per Set-Aside	WOSB Average Award per Set-Aside
2000	1	\$0.0	-	\$0.0	0.0%	0.0%	\$32,000	
2001	48	\$3.5	4	\$0.2	8.3%	4.8%	\$73,330	\$42,320
2002	69	\$2.6	11	\$0.2	15.9%	8.9%	\$38,322	\$21,479
2003	473	\$25.6	39	\$1.1	8.2%	4.1%	\$54,130	\$27,148
2004	164	\$7.4	21	\$1.1	12.8%	14.2%	\$45,418	\$50,271
2005	237	\$12.9	43	\$3.4	18.1%	26.2%	\$54,432	\$78,672
2006	252	\$10.0	46	\$0.6	18.3%	5.7%	\$39,795	\$12,440
2007	274	\$9.1	53	\$3.4	19.3%	37.6%	\$33,116	\$64,437
2008	264	\$6.7	42	\$0.7	15.9%	10.6%	\$25,354	\$16,894
2009	409	\$10.8	86	\$1.3	21.0%	11.7%	\$26,328	\$14,692
2010	1,286	\$14.2	155	\$2.1	12.1%	14.8%	\$11,066	\$13,543
2011	1,329	\$18.1	152	\$3.1	11.4%	17.4%	\$13,598	\$20,680
2012	1,019	\$14.6	123	\$2.2	12.1%	15.3%	\$14,301	\$18,183
2013	105	\$1.3	9	\$0.2	8.6%	15.6%	\$11,996	\$21,803
Total	5,930	\$136.8	784	\$19.5	13.2%	14.3%	\$23,077	\$31,888

Year	EDWOSB Contracts	EDWOSB Awards	EDWOSB Average Award	EDWOSB % Total Set-Asides	WOSB Contracts	WOSB Awards	WOSB Average Award	WOSB % Total Set-Asides
2011	1				1	47,374	\$	0.075%
2012	1				1	6,283	\$	0.098%
2013	-				-	-		0.000%
Total	-	\$0		0.000%	2	53,657	\$	0.034%

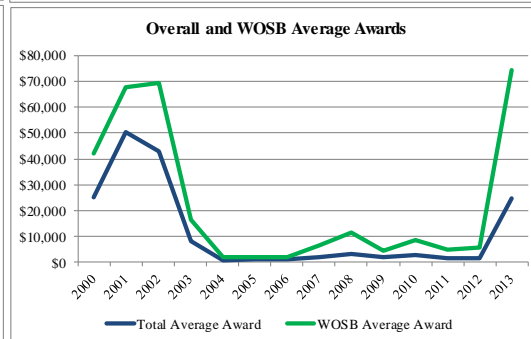
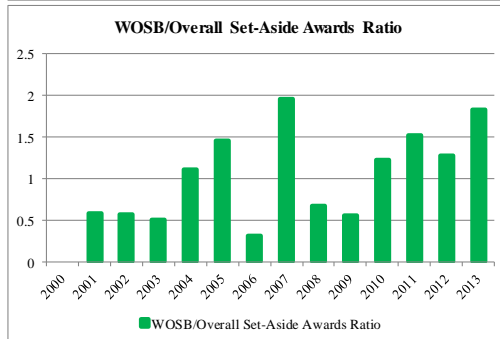
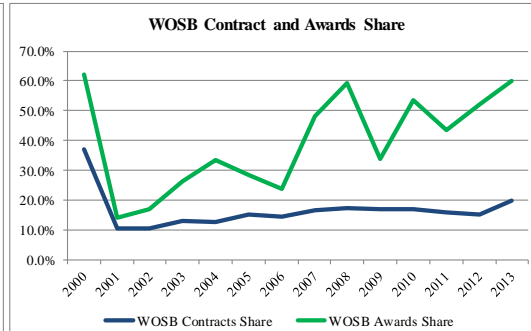
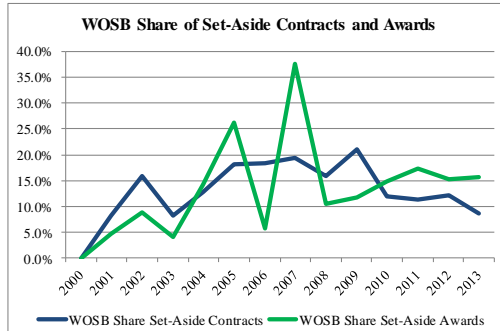
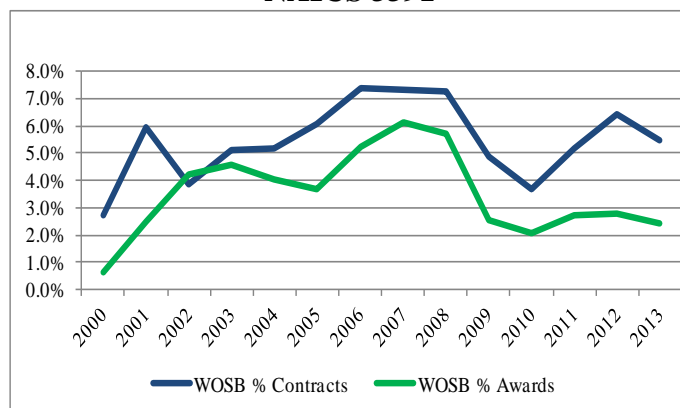


Figure 5-3 illustrates the time-series analysis for NAICS 3391, Medical Equipment and Supplies Manufacturing, which contained the largest number of individual contracts in the sub-dataset focusing on the 83 industries specifically identified by the WOSB FCP where WOSBs are underrepresented or substantially underrepresented.

Figure 5-3
WOSB Share of Contracts and Dollars
NAICS 3391



Observations from Figure 5-3 include:

- Our share analysis indicates WOSBs generally gained share against non-WOSBs from FY2000 through FY2007, but declined sharply through FY2010.⁵⁰
- The share of WOSB contracts is increasing again, but in FY2012, WOSBs remained underrepresented within the industry, earning only 6.4 percent of contracts and only 2.8 percent of awards, failing the WOSB FCP 5 percent threshold for awards.
- Within NAICS 3391, WOSBs earn lower average awards per contract than other businesses contracting within the industry, as the WOSB contract share remains greater than the WOSB award share.⁵¹

We also analyzed several additional NAICS which were a subset of the 83 designated industries where WOSBs were underrepresented or substantially underrepresented.⁵² The three largest NAICS codes (in terms of total contracts awarded) are 3391 (discussed above), 5413, and 5415. Figure 5-4 depicts the time-series share analysis for WOSBs engaging in Federal

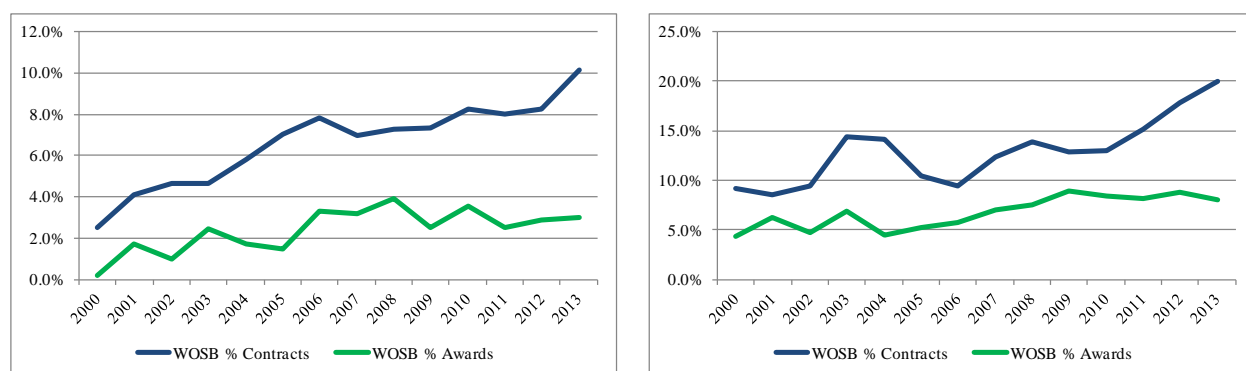
⁵⁰ Some volatility may be due to the downturn of the economy during 2008 and 2009.

⁵¹ For example, in FY2012 the average contract value for the industry was \$29,664 and the average contract value for WOSBs for the industry was \$12,769, approximately 57 percent less than the industry average.

⁵² Again, we refer our readers to our companion “Data Book” which contains data on every NAICS code.

procurement within NAICS 5413 (Architectural, Engineering and Related Services) and 5415 (Computer Systems Design and Related Services).⁵³

Figure 5-4
WOSB Share of Contracts and Dollars for NAICS 5413 and NAICS 5415



We observe positive share increases for both contracts won and the dollar amount received by WOSBs over time. Furthermore, we observe a significant increase in the share of contracts won by WOSBs since the implementation of the WOSB FCP. As we discuss in Chapter 7, WOSBs within each industry benefitted from the use of the women-owned set-aside provisions of the WOSB FCP. However, we note that despite the increase in share of contracts, we did not observe a corresponding increase in share of dollars awarded. This is despite over \$1.3 million in contract dollars awarded to date for NAICS 5413 and over \$6.5 million awarded in NAICS 5415 specifically using the WOSB FCP set-aside programs. We discuss additional analytical insight into the use of these set-asides in Chapter 7.⁵⁴

Agency Analysis

A key component of the WOSB FCP is the goal that agencies award at least 5 percent of their prime Federal contracts and dollars to women-owned small business. As such, it is necessary to determine which agencies are succeeding, which are failing, and which agencies demonstrate increased WOSB shares in contracts and amounts awarded. Table 5-1 shows share of contracts awarded to WOSBs for the top five agencies in terms of total contracts awarded between FY2000 and FY2013.

⁵³ Both of these NAICS are identified as industry codes where WOSBs are significantly underrepresented.

⁵⁴ We also note that despite the growing disparity in WOSB contract and awards share, NAICS 5415 currently meets the 5 percent FCP threshold in terms of both parameters, indicating program “success.” In fact, NAICS 5415 has exceeded the threshold since 2004, but is still considered an industry in which WOSBs are underrepresented when compared to non-WOSBs.

Table 5-1
WOSB Contract Share for the Top Five Agencies

Year	Department of the Interior	Department of Justice	Department of Veterans Affairs	General Services Administration	Department of Defense
2000	7.3%	6.4%	6.5%	7.4%	5.6%
2001	7.8%	7.3%	6.2%	7.5%	5.9%
2002	9.3%	7.9%	5.9%	6.5%	7.3%
2003	10.3%	11.3%	6.0%	9.0%	7.6%
2004	9.9%	12.2%	5.9%	13.6%	8.3%
2005	9.7%	8.1%	7.9%	14.1%	8.2%
2006	10.2%	8.6%	8.5%	14.6%	8.4%
2007	9.8%	8.5%	6.7%	14.6%	9.0%
2008	10.2%	8.5%	6.3%	13.6%	9.2%
2009	11.1%	8.9%	5.7%	11.9%	9.9%
2010	11.4%	9.2%	5.6%	12.6%	9.8%
2011	13.0%	9.1%	6.3%	14.3%	9.6%
2012	15.2%	10.1%	7.8%	15.4%	9.7%
2013	13.5%	8.6%	7.1%	14.1%	8.7%
Total WOSB Contracts	50,261	68,950	292,423	700,559	736,333
Total Contracts	463,976	772,589	4,232,764	5,209,654	8,363,674

Observations from Table 5-1 include:

- There is a general increasing trend for the top five agencies in terms of total contracts awarded.
- All top five agencies consistently met and exceeded the 5 percent FCP threshold during the research period.
- With the exception of the Department of Defense, each agency increased the number of contracts awarded to WOSB from the period immediately prior to implementation of the WOSB FCP (i.e., FY2010) compared to post-implementation (i.e., FY2012).
- These agencies represent approximately 88 percent of total WOSB contracts.

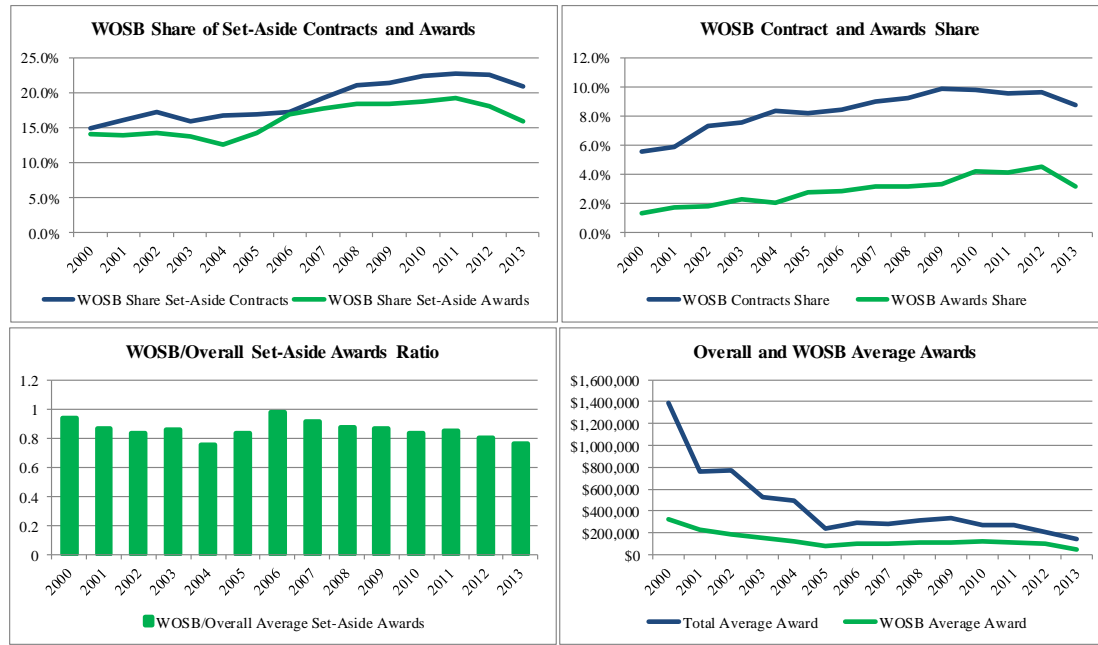
The Department of Defense was the largest agency in contracts and dollars awarded during the procurement analysis time period. Figure 5-5 presents the agency scorecard for the Department of Defense, including statistics for WOSB procurement. Figure 5-5 includes information on the use of set-asides, although we discuss the issue of set-asides in additional detail in Chapter 7.

Figure 5-5
Agency 9700: Department of Defense Procurement Scorecard

Agency 9700								
Year	Total Contracts	Total Awards (Millions USD)	WOSB Contracts	WOSB Awards (Millions USD)	WOSB % Contracts	WOSB % Awards	Total Average Award	WOSB Average Award
2000	219,073	\$304,849.6	12,228	\$3,986.6	5.6%	1.3%	\$1,391,544	\$326,025
2001	211,207	\$160,092.2	12,357	\$2,774.6	5.9%	1.7%	\$757,987	\$224,536
2002	303,311	\$234,324.3	22,224	\$4,115.4	7.3%	1.8%	\$772,555	\$185,178
2003	382,039	\$202,550.4	28,940	\$4,557.8	7.6%	2.3%	\$530,182	\$157,492
2004	454,660	\$226,268.9	37,802	\$4,609.7	8.3%	2.0%	\$497,666	\$121,944
2005	944,358	\$226,555.4	77,444	\$6,187.5	8.2%	2.7%	\$239,904	\$79,897
2006	877,657	\$253,575.9	73,645	\$7,212.0	8.4%	2.8%	\$288,924	\$97,929
2007	852,403	\$243,413.8	76,761	\$7,717.1	9.0%	3.2%	\$285,562	\$100,534
2008	918,007	\$291,816.9	84,692	\$9,203.3	9.2%	3.2%	\$317,881	\$108,668
2009	813,325	\$271,856.4	80,173	\$9,056.6	9.9%	3.3%	\$334,253	\$112,963
2010	802,353	\$219,413.1	78,628	\$9,256.8	9.8%	4.2%	\$273,462	\$117,729
2011	742,974	\$203,132.0	71,090	\$8,305.6	9.6%	4.1%	\$273,404	\$116,832
2012	741,557	\$151,157.4	71,573	\$6,852.1	9.7%	4.5%	\$203,838	\$95,736
2013	100,750	\$14,607.4	8,776	\$455.9	8.7%	3.1%	\$144,987	\$51,950
Total	8,363,674	\$3,003,613.7	736,333	\$84,291.1	8.8%	2.8%	\$359,126	\$114,474

Year	Total Contracts with Set-Asides	Total Awards with Set-Asides (Millions USD)	WOSB Contracts with Set-Asides	WOSB Awards with Set-Asides (Millions USD)	WOSB % Set- Aside Contracts	WOSB % Set- Aside Awards	Total Average Award per Set- Aside	WOSB Average Award per Set- Aside
2000	26,894	\$11,772.8	4,009	\$1,650.3	14.9%	14.0%	\$437,747	\$411,652
2001	38,113	\$10,296.0	6,108	\$1,427.3	16.0%	13.9%	\$270,145	\$233,675
2002	59,236	\$13,706.0	10,168	\$1,957.0	17.2%	14.3%	\$231,379	\$192,466
2003	78,766	\$16,595.5	12,530	\$2,262.2	15.9%	13.6%	\$210,694	\$180,543
2004	79,724	\$15,437.7	13,340	\$1,948.4	16.7%	12.6%	\$193,640	\$146,060
2005	193,838	\$21,881.6	32,829	\$3,103.1	16.9%	14.2%	\$112,886	\$94,524
2006	168,063	\$21,902.6	28,983	\$3,685.7	17.2%	16.8%	\$130,324	\$127,169
2007	120,826	\$22,207.9	23,277	\$3,922.4	19.3%	17.7%	\$183,801	\$168,510
2008	121,604	\$28,377.5	25,580	\$5,197.3	21.0%	18.3%	\$233,360	\$203,179
2009	149,775	\$32,862.3	32,003	\$6,060.6	21.4%	18.4%	\$219,411	\$189,375
2010	150,148	\$33,188.4	33,675	\$6,215.4	22.4%	18.7%	\$221,038	\$184,571
2011	142,329	\$29,006.6	32,323	\$5,580.2	22.7%	19.2%	\$203,800	\$172,638
2012	142,734	\$26,024.3	32,027	\$4,678.8	22.4%	18.0%	\$182,327	\$146,088
2013	16,102	\$1,832.6	3,359	\$289.8	20.9%	15.8%	\$113,814	\$86,266
Total	1,488,152	\$285,091.8	290,211	\$47,978.5	19.5%	16.8%	\$191,574	\$165,323

Year	EDWOSB Contracts	EDWOSB Awards	EDWOSB Average Award	EDWOSB % Total Set-Asides	WOSB Contracts	WOSB Awards	WOSB Average Award	WOSB % Total Set-Asides
2011	20	\$3,319,294	\$ 165,965	0.014%	78	9,534,516	\$122,237	0.055%
2012	147	\$31,491,210	\$ 214,226	0.103%	165	19,576,772	\$118,647	0.116%
2013	3	\$341,715	\$ 113,905	0.019%	16	985,065	\$61,567	0.099%
Total	170	\$35,152,219	\$ 206,778	0.011%	259	\$30,096,352	\$302,451	0.017%



We refer the reader to our “Data Book” for a comprehensive look at contract award procurement statistics for each agency we reviewed and analyzed. However, we found that several agencies were consistently awarding a higher percentage of contracts to WOSBs compared to the historical average across all agencies. These included the Department of Housing and Urban Development (20.7 percent over research time period), Equal Employment Opportunity Commission (20.7 percent), Office of Personnel Management (15.1 percent) and the Department of Education (14.3 percent).⁵⁵ Each agency, with the exception of the Equal Employment Opportunity Commission, had FY2012 results that exceeded the historical average for the share of contracts awarded to WOSBs.⁵⁶

Table 5-2 shows the WOSB award share for the top five agencies in terms of total dollars awarded during the research period. Although the top five agencies in terms of total contracts met and exceeded the 5 percent FCP goal during the entire research period, in FY2000, none of the top five agencies in terms of total awards met the WOSB FCP mandate.

Table 5-2
WOSB Award Share for the Top Five Agencies

Year	General Services Administration	Department of Health and Human Services	National Aeronautics and Space Administration	Department of Energy	Department of Defense
2000	4.5%	3.9%	3.4%	0.1%	1.3%
2001	4.7%	3.1%	4.6%	0.7%	1.7%
2002	4.2%	3.3%	4.9%	2.0%	1.8%
2003	6.2%	4.4%	2.3%	0.6%	2.3%
2004	3.7%	7.1%	1.2%	6.4%	2.0%
2005	5.2%	5.2%	1.7%	1.7%	2.7%
2006	6.6%	4.5%	1.1%	0.6%	2.8%
2007	5.8%	4.2%	4.4%	1.7%	3.2%
2008	6.4%	5.8%	3.9%	1.0%	3.2%
2009	5.6%	6.4%	2.6%	1.6%	3.3%
2010	6.2%	5.8%	4.6%	5.0%	4.2%
2011	9.9%	6.3%	6.8%	5.0%	4.1%
2012	8.8%	5.4%	5.2%	18.2%	4.5%
2013	8.0%	5.7%	7.5%	17.2%	3.1%
Total WOSB Awards	\$7,669	\$7,830	\$4,488	\$2,360	\$84,291
Total Awards (Millions USD)	\$137,278	\$151,196	\$157,509	\$328,057	\$3,003,614

Analysis of WOSB procurement activity within the top five awarding agencies yields the following observations:

⁵⁵ These represent agencies that awarded individually awarded in excess of 2,000 contracts to WOSBs during the research time period, including over 10,000 awarded by Office of Personnel Management. However, the agency with the highest percentage of WOSB contract awards was the Merit Systems Protection Board, but this agency only issued a total of 1,348 contracts since FY2000.

⁵⁶ The Equal Employment Opportunity Commission had a FY2012 value of 19.7 percent, slightly below the historical average but still exceeding the 5 percent goal by a significant amount.

- Until FY2003, none of the top five awarding agencies reached the WOSB FCP 5 percent threshold.⁵⁷
- In FY2012, the Department of Energy WOSB awards share increased dramatically, the direct result of one vendor, classified as a WOSB, receiving almost 10 percent of contract dollars.⁵⁸ However, as shown by the total WOSB awards, the long-term average is only 0.7 percent, influenced by a lack of dollars awarded on contracts to WOSBs in FY2000, FY2001, FY2003, and FY2005 through FY2009.⁵⁹
- Since FY2010, WOSB award share has increased at a greater rate than in previous years, potentially due to the impact of the WOSB FCP implementation in 2011.
- The Department of Defense remains the largest agency in terms of awards, disbursing approximately ten times more awards than the next largest agency.
- Despite the fact that the Department of Defense missed the WOSB FCP 5 percent goal in FY2012, its WOSB awards share has increased over time.

Similar to our analysis of contracts, we also recognized that several agencies had dollars awarded to WOSBs that were above the historical average of dollars awarded to WOSBs compared to the total population across all agencies. For example, the Small Business Administration awarded 19.2 percent of all dollars to WOSBs during the research time period, although this amount was only 15.0 percent in FY2012. In addition, the Department of Housing and Urban Development awarded 14.9 percent of dollars to WOSBs, complementing the strong performance discussed previously concerning the number of contracts awarded. Finally, the Department of Commerce also awarded 10.1 percent of all dollars to WOSBs, including 16.0 percent in FY2012.⁶⁰

In addition to examining the top five agencies in terms of total contracts and awards, it is important to identify how many, of a total 77 agencies, are meeting the WOSB FCP 5 percent goals in terms of both dollars and contracts. It is important to note that in some years, small agencies may not issue any Federal contracts and thus 77 agencies may not be contracting in any given year. As seen in Figure 5-6, the number of agencies meeting the 5 percent goal has increased over time to reach a high of 60 in terms of WOSB contract share and 47 in terms of WOSB award share in FY2012.

⁵⁷ Contrasts with contracts (Table 5-1) in which the top five contracting agencies have achieved the FCP since FY2000.

⁵⁸ In addition, we note that contract awards in the IIC, Inc. contract roll-up declined from almost \$3 billion in FY2011 to \$1 billion in FY2012. In FY2011, the largest contract dollar amount associated with a WOSB was \$13.6 million, compared to \$104.9 million in FY2012.

⁵⁹ Finally, we note that the Department of Energy is the one agency most heavily influenced by our contract roll-up, such that over 50 percent of “contract” dollars appear in FY2000. Contract dollar awards for the Department of Energy fell precipitously from FY2008 through the present.

⁶⁰ These are the three agencies which had total awards exceeding \$1 billion during the research time period and awarded in excess of 10.0 percent of these dollars to WOSBs.

Figure 5-6
Number of Agencies Successful in Meeting the 5 Percent WOSB Share Goal



In contrast a number of agencies are not meeting the WOSB FCP goals, shown in Table 5-3.

Table 5-3
Agencies Failing the WOSB FCP Goals, FY2012

<u>Agency</u>	WOSB Contracts Share
9000: SELECTIVE SERVICE SYSTEM	2.7%
2700: FEDERAL COMMUNICATIONS COMMISSION	4.0%
<u>Agency</u>	WOSB Awards Share
0300: LIBRARY OF CONGRESS	0.0%
3352: JOHN F. KENNEDY CENTER FOR THE PERFORMING ARTS	0.2%
1145: PEACE CORPS	0.5%
2700: FEDERAL COMMUNICATIONS COMMISSION	1.1%
9000: SELECTIVE SERVICE SYSTEM	1.2%
9507: COMMODITY FUTURES TRADING COMMISSION	1.3%
9577: CORPORATION FOR NATIONAL AND COMMUNITY SERVICE	1.3%
6300: NATIONAL LABOR RELATIONS BOARD	2.2%
8961: FEDERAL ENERGY REGULATORY COMMISSION	2.3%
0500: GENERAL ACCOUNTING OFFICE	2.5%
3600: DEPARTMENT OF VETERANS AFFAIRS	2.9%
9506: FEDERAL ELECTION COMMISSION	3.3%
9508: NATIONAL TRANSPORTATION SAFETY BOARD	3.7%
6100: CONSUMER PRODUCT SAFETY COMMISSION	4.4%
9700: DEPARTMENT OF DEFENSE	4.5%

Analysis of WOSB procurement trends at the NAICS (industry) and agency level yields several general conclusions. We summarize our conclusions, with emphasis added for our most noteworthy conclusions and observations, as follows:

- ***The contract award gender gap appears to be closing in select industries, most notably in NAICS 3359 (Other Electrical Equipment and Component Manufacturing), NAICS 5416 (Management, Scientific and Technical Consulting Services), and NAICS 6214 (Outpatient Care Centers). Each of these NAICS codes represent an industry in which WOSBs are substantially underrepresented.***⁶¹
- ***The number of industries in which WOSB awards share is greater than WOSB contract share remains low, indicating that on average, WOSBs are earning less money per contract than non-WOSBs in the majority of industries.***
- ***Within the 83 underrepresented NAICS, WOSBs are on average meeting the contract threshold, but remain underrepresented in terms of awards share.***
- The top five agencies in terms of total contracts awarded have all met the WOSB FCP 5 percent goal in terms of contracts since FY2000.
- Four of the top five agencies in terms of total awards met the WOSB FCP 5 percent threshold in FY2012, the exception was the Department of Defense, which missed the goal with a 4.5 percent WOSB awards share in FY2012.
- Since FY2010, the WOSB award share has increased at a greater rate than in previous years among the top five awarding agencies.
- In FY2012, 60 of 62 agencies issuing prime Federal contracts met the WOSB contract share goal; 47 of 62 agencies met the WOSB awards share goal.
- The number of agencies meeting the WOSB FCP goal has increased over time in terms of both awards and contracts and reached a peak in FY2012.

⁶¹ This represents a sample of NAICS where we observe a decrease in the gap between average awards of WOSBs and non-WOSBs. We refer the reader to our “Data Book” for analyses on each NAICS.

Chapter 6. Vendor-level WOSB Procurement Analysis

In the preceding section, we provide procurement results across several different business types, including women-owned small businesses.⁶² One of the key variables underlying each contract record is the specific vendor that receives the contract award and the associated funding amount. As part of IIC, Inc.'s contract roll-up process, we relied on the contracting officer size determination to establish those vendors which qualified as a small business on a particular contract. Given the subjectivity in determining size classifications and the impact on our definition of women-owned small businesses, we were interested in whether we could develop insight into WOSB procurement activity at the vendor level.⁶³ We sought to evaluate the following research objectives from a vendor level:

- Does the split between WOSB vendors and non-WOSB vendors participating in Federal procurement correlate with the ratio of contracts and dollars observed at the aggregate level?
- How concentrated is procurement for WOSBs among vendors? Do select vendors continue to win contracts year after year?
- Do we observe any correlation between the activity-level of WOSB vendors, as defined by number of years with distinct procurement contract awards, and the level of contracts and dollars?
- Do we observe an increase in WOSB vendor participation given recent legislative and industry efforts designed to encourage WOSB participation in Federal procurement?

The underlying IIC, Inc. Federal procurement contract database included 493,124 vendors, as identified by the DUNS variable, engaged in Federal procurement from FY2000 through the present. We note that Federal procurement for large businesses was highly concentrated, given that the top ten overall vendors accounted for 8.98 percent of total dollars awarded from FY2000 forward, while the top 25 vendors represented 16.01 percent of total dollars awarded and the top 100 vendors were responsible for 32.38 percent of contract dollars awarded.

As part of our contract roll-up, we elected to use the earliest observed contract action to define our business type (e.g., WOSB, OtherSB, WOLB, etc.). Table 6-1 provides a high-level summary of the vendors receiving a contract award during our procurement analysis time period. We observed 493,124 different DUNS numbers, representing vendors which won at least one

⁶² Recall, we use the term “business type” to refer to the type of business by gender and size classification. Thus a WOSB is a “business type” identified by gender (women-owned) and size (small).

⁶³ The subjectivity involves contracting officers potentially using different size standards to classify a particular vendor or business as small or large. In some cases, contracting officers within one agency could evaluate a vendor using size standards specific to a particular industry, which might differ from a separate contracting officer's size standard criteria for the same vendor in the same fiscal year. As a result, at the vendor-level, the procurement data could include a vendor which was classified as both a small and large business (on separate contracts) within the same fiscal year. We accepted the size definitions included the FPDS-NG data “as-is” and did not make any adjustments to standardize size classifications for particular vendors.

award at some point since FY2000. As the table shows, vendors awarded a contract or contracts solely as a WOSB represented approximately 11 percent of the total vendor count. In contrast, OtherSBs (i.e., non-women-owned small businesses) represented approximately 53 percent of the total vendor observations.

Table 6-1
Vendor (DUNS) Analysis by Business Type

Row	Vendors Awarded Contracts between FY2000 and FY2013:	Count	Percent of Total
1	Contracts awarded as a WOSB for every contract award	53,470	10.84%
2	Contracts awarded as a WOLB for every contract award	2,470	0.50%
3	Contracts awarded as a WOSB on some occasions and a WOLB on others	5,555	1.13%
4	Contracts awarded as an OtherSB for every contract award	263,462	53.43%
5	Contracts awarded as an OtherLB for every contract award	62,635	12.70%
6	Contracts awarded as an OtherSB on some occasions and an OtherLB on others	81,376	16.50%
7	Contracts awarded as "women-owned" on some contracts, and "non-women-owned" on others	24,156	4.90%
8	Total	493,124	100.00%
9	Vendors winning at least one contract when classified as a WOSB	81,775	16.58%

Certain vendors won contracts under different business type classifications during the procurement analysis time period. For example, there are instances where a vendor won a contract as a WOSB in one year, but won a contract as a WOLB in another year (e.g., Row 3 in Table 6-1). There are three principal reasons for a change in business type classification:

- Contracting officers applied different size standards based on agency or NAICS during the procurement analysis time period, such that a vendor could be classified as “small” for the purposes of one contract award, but as “large” for the purposes of another contract award, even in the same fiscal year (e.g., Rows 3 and 6 from Table 6-1);
- The vendor changed ownership, such that a business that was previously a WOSB might no longer be majority owned by a woman or women in subsequent fiscal years (e.g., becomes a “OtherSB”), or vice versa (e.g., Row 7 from Table 6-1); and
- The particular vendor was erroneously classified on a specific contract within FPDS-NG.

Our review of the data indicates that approximately 81,775 vendors won at least one contract when classified as a WOSB. These include the vendors who were entirely classified as WOSBs throughout the time period (Row 1 of Table 6-1), as well as vendors who had at least one contract awarded as a WOSB, but won other contracts under a different business type (from Rows 3 and 7 of Table 6-1).

Initial analysis indicates that WOSBs are not awarded contracts and funding levels commensurate with the number of WOSBs vendors as a percentage of the total number of vendors receiving awards within Federal procurement. For example, WOSBs received only 3.3 percent of contract dollars over the procurement analysis time period, despite 16.6 percent of all vendors winning at least one award when classified as a WOSB. There are several potential

reasons for this disparity, most notably that OtherLBs are almost equally represented as WOSBs in the data set. As discussed in Chapter 4, the distribution of awards is weighted to larger contracts, such that the average contract award for large businesses is significantly higher than for small businesses. Another potential reason for the disparity might be that WOSBs have only been more active in winning awards in recent time periods. We analyzed the trends in WOSB vendors winning awards compared to OtherSBs during the procurement analysis time period. Table 6-2 shows vendor participation for small business procurement during the procurement analysis time period.⁶⁴

Table 6-2
Small Business Vendors Receiving a Contract Award Each Fiscal Year

Year	WOSB vendors	OtherSB vendors	Total SB vendors	WOSB vendors % Total SB vendors
(a)	(b)	(c)	(d) = (b) + (c)	(e) = (b) / (d)
2000	6,398	38,288	44,686	14.3%
2001	6,468	37,835	44,303	14.6%
2002	8,721	46,047	54,768	15.9%
2003	10,610	57,361	67,971	15.6%
2004	15,160	77,665	92,825	16.3%
2005	18,837	95,975	114,812	16.4%
2006	19,932	103,829	123,761	16.1%
2007	19,889	102,542	122,431	16.2%
2008	21,412	103,300	124,712	17.2%
2009	20,496	93,383	113,879	18.0%
2010	20,705	91,207	111,912	18.5%
2011	20,349	84,123	104,472	19.5%
2012	17,692	74,590	92,282	19.2%
2013	6,427	26,201	32,628	19.7%

The data indicate that WOSB vendor participation has risen over time compared to other small business vendor participation in Federal procurement. These results are also consistent with trends analyzed in Chapter 4 regarding the rise in WOSB share of total small business contracts and dollars achieved compared to OtherSBs share between FY2000 and the present. Comparison of Tables 4-2 and 6-2 highlights a trend that the number of WOSBs as a percent of total small business vendors is less than comparable contract share data, indicating that WOSBs have been receiving more contracts per vendor than OtherSBs since FY2004, although the same cannot be said for contract dollars. For example, Table 4-2 in Chapter 4 indicates that WOSBs received 21.2 percent of all small business contracts awarded in FY2012. Comparison to Table 6-2 shows that WOSB represented only 19.2 percent of all vendors winning an award as a small

⁶⁴ These data represent the number of separate DUNS numbers associated with small business contracts in each fiscal year. A single vendor may have won a contract in multiple fiscal years and are included in each year a contract was awarded.

business in FY2012. In contrast, Table 4-2 indicates that WOSBs only won 17.5 percent of all contract dollars awarded on small business contracts in FY2012, which is a lower percentage than the 19.2 percent vendor share shown in Table 6-2.

Table 6-3 summarizes this analysis by categorizing vendor participation by number of active years, which we define as a fiscal year in which a vendor had at least one contract award.

Table 6-3
WOSB Vendor Participation by Number of Years Awarded a Contract

Analysis of WOSB Vendor Activity by Number of Years with Contract Award						Subset Analysis of WOSB Vendors Receiving Contract Awards in a Single Fiscal Year			
Active Years			Total Dollars		Avg contract amount (\$m)		Total WOSB		
	Count	% of Total	(\$m)	% of Total			Vendors (Single Year)	Vendors in Select FY	Percent
1	40,577	49.6%	\$ 5,082.0	3.4%	\$ 0.13	----->	2000	2,163	6,398 33.8%
2	14,915	18.2%	\$ 4,349.9	2.9%	\$ 0.15		2001	1,445	6,468 22.3%
3	8,168	10.0%	\$ 6,308.2	4.2%	\$ 0.26		2002	1,997	8,721 22.9%
4	5,058	6.2%	\$ 6,811.4	4.6%	\$ 0.34		2003	2,236	10,610 21.1%
5	3,436	4.2%	\$ 7,151.7	4.8%	\$ 0.42		2004	3,348	15,160 22.1%
6	2,421	3.0%	\$ 8,509.5	5.7%	\$ 0.59		2005	3,983	18,837 21.1%
7	1,857	2.3%	\$ 10,470.3	7.0%	\$ 0.81		2006	3,305	19,932 16.6%
8	1,486	1.8%	\$ 12,911.2	8.7%	\$ 1.09		2007	2,830	19,889 14.2%
9	1,163	1.4%	\$ 11,225.7	7.5%	\$ 1.07		2008	3,565	21,412 16.6%
10	889	1.1%	\$ 12,523.2	8.4%	\$ 1.41		2009	3,688	20,496 18.0%
11	672	0.8%	\$ 13,128.9	8.8%	\$ 1.78		2010	3,831	20,705 18.5%
12	422	0.5%	\$ 14,476.4	9.7%	\$ 2.86		2011	3,984	20,349 19.6%
13	407	0.5%	\$ 16,415.5	11.0%	\$ 3.10		2012	3,558	17,692 20.1%
14	304	0.4%	\$ 19,355.3	13.0%	\$ 4.55		2013	644	6,427 10.0%
Total	81,775		\$ 148,719.4				Total	40,577	

The left side of Table 6-3 includes several interesting highlights. First, almost 50 percent of WOSBs who received a prime Federal contract only had activity in a single fiscal year. We provide a breakdown of these vendors by activity on the right side of Table 6-3. For example, in FY2005, we observe 3,983 WOSB vendors who received a contract only in that fiscal year, without any other contracts during the research period. We contrast these numbers with the total WOSB vendor participation in each year and calculate the percent of WOSB vendors with a single contract over the entire research period versus the total population of WOSB vendors with contract awards in a given fiscal year. The percentage of WOSBs with procurement activity in a single year as a percent of the total participation in each fiscal year declined steadily from FY2000 through FY2007, but increased between FY2007 and FY2012. However, we cannot conclude that this is a negative trend given that we are unaware of whether vendors active in only one year will participate in Federal procurement post-FY2012.

Second, the rate of activity, as defined by the fiscal years in which a WOSB vendor received a contract, declines with time, such that less than 9 percent of all WOSBs had contract awards in more than six fiscal years. However, we note that the data in Table 6-3 represent

actual awards, and it is possible that a WOSB vendor with only one year of participation may have participated in Federal procurement either by bidding on, but not receiving awards in other fiscal years, or alternatively engaging in Federal procurement opportunities via subcontracting opportunities. Alternatively, a function of the contract roll-up also masks whether WOSBs who only have activity in one fiscal year are in fact working on a multi-year project, with additional funding added to the original contract via modifications. In this case, these amounts would roll-up to the initial contract via the IIC, Inc. contract roll-up methodology.

The third key observation from Table 6-3 is that a higher activity rate is correlated with both a greater share of contract awards among WOSBs and higher average awards. Thus, the 8.8 percent of WOSB vendors who received contract awards in more than six fiscal years represented 74.3 percent of the total WOSB contract awards. In addition, the average annual awards per vendor increases with increasing years of activity. For example, for WOSBs receiving at least one contract in all 14 fiscal years included in the procurement analysis time period, the average total of dollars awarded each year was \$4.55 million, in contrast to the average vendor awards of \$125.2 thousand for WOSB vendors receiving contracts in only one fiscal year. Table 6-3 provides quantitative support for the importance of fostering long-term Federal procurement participation for WOSBs.

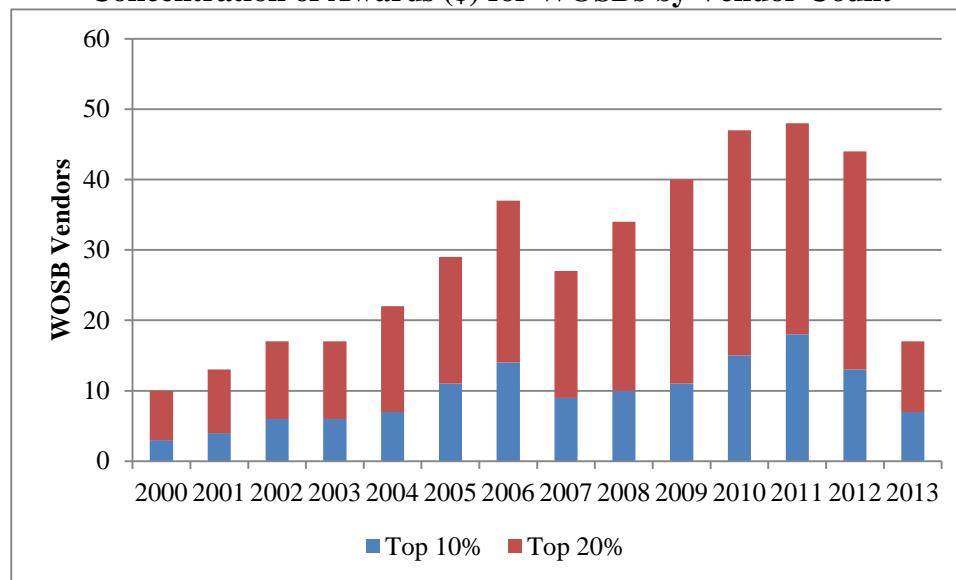
We also note that “births,” “deaths” and continuity information is masked in Table 6-3.⁶⁵ For example, we observe that 1,486 WOSB vendors were awarded contracts in at least eight distinct procurement years between FY2000 and FY2013. What the data do not show is whether these eight years are continuous, whether gaps exist within the WOSB procurement activity, or whether the majority of participation is in early years or later years. We segmented the data to address the issue of continuity based on years of activity. Our analysis indicates that vendors who received contracts and awards more recently are more likely to stay active in Federal procurement. For example, of the 1,486 WOSB vendors awarded contracts in at least eight years, 72 of these vendors were active each year from FY2000 through FY2007, but not thereafter. In contrast, 1,057 vendors, or over 71 percent of the total, engaged in procurement activity as recently as FY2011, including 359 active vendors each year between FY2011 and FY2013. We view this as positive news for WOSB Federal procurement, especially considering

⁶⁵ We classify “births” as occasions where a WOSB vendor begins participation in a year other than FY2000, with an emphasis on later years. For example, observations of a vendor participating annually between FY2006 through FY2013 might indicate a WOSB entering the Federal procurement process in 2006, given there were no observations prior to FY2006. Alternatively, a WOSB vendor who last participated in FY2008, with no contracts for FY2009 through FY2013, represents a “death” given that the business either no longer exists, has not elected to participate in Federal procurement, or potentially, has participated but has not been successful in securing prime Federal contracts since the last observation several years prior.

the incomplete data for FY2013.⁶⁶ Finally, of the 1,486 vendors awarded contracts within the last eight fiscal years, only 212 were inactive during the last four years of the research period.

A related consideration regarding WOSB procurement activity involves the level of concentration in contracts and awards by specific WOSB vendors. Analysis of the levels of concentration in dollars awarded each fiscal year indicates a high level of concentration. In other words, a small number of WOSB vendors account for a disproportionately large share of WOSB contract award dollars throughout the procurement analysis time period. Figure 6-1 depicts this phenomenon.

Figure 6-1
Concentration of Awards (\$) for WOSBs by Vendor Count



The blue bar represents the number of WOSB vendors that account for 10 percent of total dollars associated with WOSB contracts awarded in each fiscal year. For example, in FY2000, three WOSB vendors received approximately 10 percent of all dollars associated with WOSB contracts awarded in FY2000. The red bar represents the additional WOSB vendors who comprise the next 10 percent of award dollars. For example, seven additional WOSB vendors accounted for the next 10 percent of WOSB contract dollars in FY2000, indicating that 10 WOSB vendors were receiving approximately 20 percent of all WOSB contract dollars in FY2000. While the level of concentration decreases over time, it is worth noting that in FY2012, 13 WOSB vendors accounted for approximately 10 percent of total WOSB contract dollars and 44 WOSB vendors accounted for approximately 20 percent of total WOSB contract dollars. As a comparison, we recall that FY2012 had in excess of 17,500 WOSB vendors with at least one

⁶⁶ FY2013 extends through September 30, 2013. Given our download date of March 6, 2013 for FY2013 we are not only missing the remainder of the fiscal year, but also a substantial portion of Department of Defense procurement data, given that the Department of Defense procurement data are subject to a 90-day lag in public reporting.

contract award. Therefore, when considering dollars awarded, WOSB prime Federal procurement remains highly concentrated among a select number of WOSB vendors.

Analysis of vendor participation leads to several conclusions regarding WOSB procurement activity. We summarize our conclusions, with emphasis added for our most noteworthy conclusions and observations, as follows:

- WOSB vendors typically represent between 10-20 percent of total vendors receiving contracts and associated award dollars for each fiscal year.
- The rate at which WOSBs have won contracts and awards has risen commensurate with the increase in general contracting activity, peaking in FY2008.
- The rate at which WOSBs have won contracts and awards has risen against those of OtherSBs, consistent with observed increases in the number of contracts awarded and the amount of dollars awarded.
- *Almost half of all WOSB vendors receive contracts only in a single fiscal year, indicating a high rate of turnover – however, it is likely some of these have remained active in procurement but contracted as a different business type (e.g., change in gender ownership), as a WOSB bidding on, but not receiving contracts, through subcontracting, or as a relatively new vendor with anticipated participation and awards post-FY2012.*
- *WOSB vendors with long periods of activity across different fiscal years tend to receive a greater share of contract dollars.*
- *WOSB contract dollars are highly concentrated among select vendors in each fiscal year, although there is often a shift in the specific vendors between fiscal years (i.e., it is not necessarily the same vendors receiving disproportionately large shares of awards year after year).*

Chapter 7. Set-Aside Analysis

The previous research sections focus on WOSB procurement activity at a vendor, agency and industry level. In this section, we investigate the role that set-asides play in influencing WOSB procurement trends. This is a critical area of investigation, given that recent legislative efforts target the use of set-asides to assist WOSBs. Data analysis across different agencies and industry codes permits complete assessment of WOSB set-aside use. Key research questions we address include:

- What procurement trends do we observe for WOSBs using set-asides to win contracts and dollars? How do these trends compare to those of OtherSBs?
- Has the introduction of the new set-asides arising from the FCP led to new entrants or incremental dollars flowing to WOSBs already contracting with the Federal government?
- Alternatively, does the implementation of these set-asides result in an offset in WOSB use of other set-asides?
- Does analysis of the EDWOSB and WOSB set-asides by agency and industry codes provide insight into which agencies and industries are currently implementing the set-aside programs specifically designed to increase the competitiveness and participation level of WOSBs?

There are a number of different set-aside programs in use to assist and encourage Federal procurement activity among select business types. Table 7-1 provides a summary of the use of set-aside contracts for the entire period of FY2000 through FY2013. The “none” category reflects contracts and amounts awarded that do not use a set-aside. The most prevalent set-aside program in use over the time period is the SBA set-aside, which sets aside Federal procurement opportunities for small business concerns, regardless of gender. Other popular small business-related set aside types include the service disabled veteran-owned small business set-aside (SDVOSBC) and the reserved for small business set-aside (RSB).⁶⁷ Table 7-1 also includes the WOSB and EDWOSB set-asides, which as part of the WOSB FCP, are reserved only for WOSBs.⁶⁸ With respect to the universe of set-asides, WOSBs tend to garner approximately 19.5 percent of the total set-aside contracts and 17.5 percent of the total awards issued on these contracts. These data exceed overall contracting by WOSBs in the small business population, given that WOSBs received only 18.4 percent of total small business contracts and 15.6 percent of small business dollars between FY2000 and the present.

⁶⁷ We note that the RSB set-aside type was technically not valid after October 31, 2009. While we observed a dramatic drop-off in use of this set-aside, we still encountered contracts in FY2010 through the present. However, 97 percent of contracts listing RSB as a set-aside occurred prior to the cut-off date.

⁶⁸ We note there are three contracts with misclassifications of ownership for the WOSB set-aside program. We have left these “as-is” consistent with our treatment of potential misclassifications in other variables.

Table 7-1
Summary of Set-Aside Programs and Federal Procurement Awards

Set-Aside	First Year of Observation in Data	WOSB Contracts	Total Contracts	WOSB Contracts % Total	WOSB Awards (\$m)	Total Awards (\$m)	WOSB Awards % Total
None	2000	1,667,592	19,135,728	8.7%	\$ 74,259	\$ 4,045,024	1.8%
SBA: Small business administration	2000	304,046	1,649,261	18.4%	\$ 34,528	\$ 219,109	15.8%
8AN: 8(a) business development sole source	2000	77,752	286,464	27.1%	\$ 20,953	\$ 99,277	21.1%
8A: 8(a) business development	2000	31,469	112,508	28.0%	\$ 12,279	\$ 49,940	24.6%
SDVOSBC: Service disabled veteran owned small business competed	2000	4,222	77,686	5.4%	\$ 768	\$ 18,724	4.1%
RSB: Reserved for small business \$2501 to 100K	2000	7,596	42,945	17.7%	\$ 133	\$ 1,212	11.0%
HZC: HUBZone	2000	7,917	34,653	22.8%	\$ 3,817	\$ 15,864	24.1%
SBP: Small business partial	2000	2,707	24,648	11.0%	\$ 1,110	\$ 15,680	7.1%
ESB: Emerging small business	2000	1,462	11,090	13.2%	\$ 42	\$ 244	17.2%
SDVOSBS: Service disabled veteran owned small business sole source	2002	695	9,898	7.0%	\$ 166	\$ 2,628	6.3%
SDB: Small disadvantaged business	2000	750	3,636	20.6%	\$ 141	\$ 813	17.3%
BI: Buy indian	2000	503	3,511	14.3%	\$ 32	\$ 438	7.3%
HS3: SDB, 8(a) with HUBZone Priority	2000	874	3,133	27.9%	\$ 196	\$ 992	19.8%
HZS: HUBZone sole source	2000	648	2,698	24.0%	\$ 171	\$ 752	22.7%
VSb: Very small business	2000	281	1,718	16.4%	\$ 5	\$ 28	16.6%
VSA: Veteran set-aside	2007	50	1,577	3.2%	\$ 8	\$ 289	2.8%
VSS: Veteran sole-source	2007	26	893	2.9%	\$ 7	\$ 152	4.9%
WOSB: Woman-owned small business	2011	552	555	99.5%	\$ 54	\$ 54	99.8%
HMT: HMP HBCU = Historically black college/university or minority institution	2000	1	550	0.2%	\$ -	\$ 181	0.0%
HMP: HMP HBCU = Historically black college/university or minority institution	2001	7	232	3.0%	\$ 4	\$ 32	11.4%
EDWOSB: Economically disadvantaged women-owned small business	2011	225	225	100.0%	\$ 47	\$ 47	100.0%
Total		2,109,375	21,403,609	9.9%	\$148,719	\$ 4,471,481	3.4%
Total Set-Aside Procurement Contracts and Awards		441,783	2,267,881	19.5%	\$ 74,460	\$ 426,458	17.5%

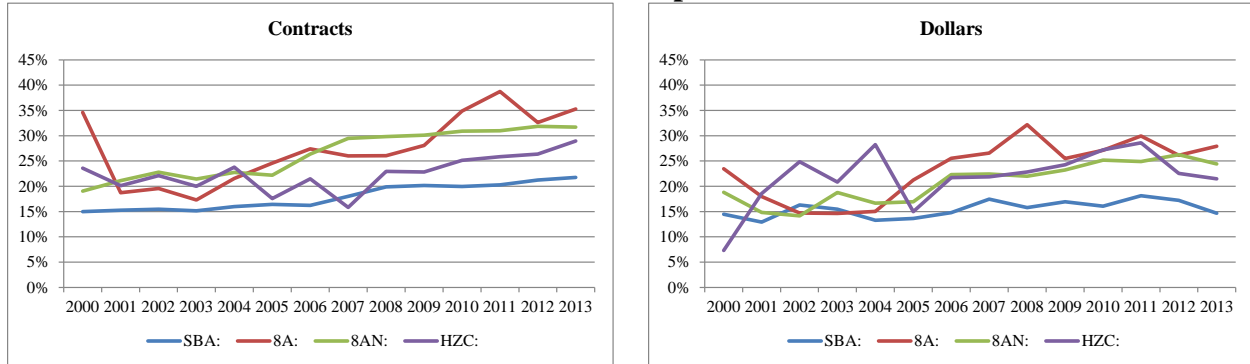
Note: Total Set-Aside summary row represents the total procurement awards less the "None" category

In addition, WOSBs exhibit a higher percentage of contracts and dollars for select set-asides in comparison to the general procurement percentages discussed previously. For example, WOSBs appear highly successful in procuring 8(a) contracts and awards, as well as HUBZone awards (e.g., including HZC, HS3 and HZS types). With respect to the latter, WOSBs receive a higher proportion of dollars than contracts, opposite of the general procurement trends that indicate that WOSBs are able to compete more effectively for the number of contracts than actual award amounts. Alternatively, WOSBs are far less represented in the use of veteran-owned set-asides. We do not find this surprising given that the vast majority of veteran-owned businesses are men-owned, given disparities in gender for the veteran population. However, this is an area of potential future research given the growing number of female veterans, particularly those serving in the Afghanistan and Iraqi conflicts.

Time-series analysis also illustrates the increasing competitiveness of WOSBs in procuring contracts and dollars through the use of set-aside programs. Figure 7-1 illustrates a time-series analysis showing the increasing percentage of set-aside contracts and dollars successfully procured by WOSBs for the four largest set-aside programs based on WOSB-participation in terms of both contracts and dollars, per Table 7-1. While the contract awards tend to exhibit greater annual volatility in the percentage obtained by WOSBs, the general trend for each set-aside is an increase in both percentage of contracts and percentage of dollars.⁶⁹

⁶⁹ Some volatility may be due to the downturn of the economy during 2008 and 2009.

Figure 7-1
WOSB Share for the Top Four Set-Asides



We also analyzed agency use of set-asides, including how WOSBs fared in procuring set-aside contracts from each agency. We include the comprehensive data and analyses by agency in our “Data Book” and, for the purposes of this report, provide a summary of the aggregate use of set-asides by the ten largest agencies in terms of procurement dollars. Table 7-2 summarizes the total procurement dollars for each agency, as well as a breakout by set-aside with a particular focus on WOSBs.

Table 7-2
Set-Aside Analysis by Major Agency

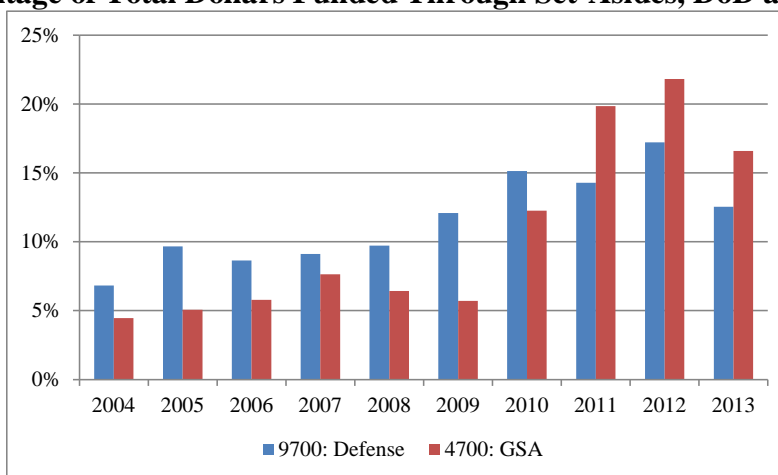
Agency (a)	Total Dollars (\$m) (b)	Set-Aside Dollars (\$m) (c)	Set-Aside Percent of Total (d) = (c) / (b)	WOSB Total Dollars (\$m) (e)	WOSB Set- Aside Dollars (\$m) (f)	WOSB Set- Aside Percent of WOSB Total (g) = (f) / (e)	WOSB Set- Aside Percent of Total Set-Aside (h) = (f) / (c)
9700: Department of Defense	\$ 3,003,613.7	\$ 285,091.8	9.5%	\$ 84,291.1	\$ 47,978.5	56.9%	16.8%
8900: Department of Energy	\$ 328,056.8	\$ 7,552.3	2.3%	\$ 2,360.1	\$ 1,414.3	59.9%	18.7%
8000: National Aeronautics and Space Administration	\$ 157,508.6	\$ 18,029.3	11.4%	\$ 4,488.0	\$ 3,028.4	67.5%	16.8%
7500: Department of Health and Human Services	\$ 151,196.3	\$ 12,871.8	8.5%	\$ 7,830.5	\$ 3,592.5	45.9%	27.9%
4700: General Services Administration	\$ 137,278.3	\$ 13,014.7	9.5%	\$ 7,668.7	\$ 2,400.7	31.3%	18.4%
3600: Department of Veterans Affairs	\$ 134,675.5	\$ 18,974.8	14.1%	\$ 5,366.4	\$ 1,737.0	32.4%	9.2%
7000: Department of Homeland Security	\$ 113,452.7	\$ 12,846.5	11.3%	\$ 7,369.3	\$ 2,454.5	33.3%	19.1%
1500: Department of Justice	\$ 66,708.6	\$ 5,235.4	7.8%	\$ 3,379.0	\$ 966.8	28.6%	18.5%
1200: Department of Agriculture	\$ 55,317.2	\$ 10,368.0	18.7%	\$ 3,584.3	\$ 1,496.0	41.7%	14.4%
6900: Department of Transportation	\$ 50,061.6	\$ 3,991.3	8.0%	\$ 3,160.1	\$ 1,066.8	33.8%	26.7%

Table 7-2 illustrates the varying levels at which select agencies not only use set-asides, but the relative success that WOSBs have in obtaining contracts through those set-aside programs. For example, the Department of Defense only allocated 9.5 percent of total procurement dollars using set-asides, compared to almost 18.8 percent for the Department of Agriculture. With respect to WOSBs, NASA awarded approximately 68 percent of all procurement dollars awarded to WOSBs using set-aside programs, while all agencies awarded only 29 percent of total WOSB procurement dollars through set-aside programs. Perhaps most interesting, is column (h) which shows the success of WOSBs in obtaining set-aside dollars by

agency versus non-WOSBs. WOSBs were particularly successful with respect to the Department of Health and Human Services where approximately 28 percent of set-aside procurement funds went to WOSBs. At the other end of the spectrum was the Department of Veterans Affairs, where WOSBs only secured 9.2 percent of set-aside funding.⁷⁰

One of the more encouraging trends in Federal procurement is the increase in set-aside use since 2004. Figure 7-2 illustrates the percentage of procurement opportunities funded through set-aside vehicles for two of the largest agencies, the Department of Defense and the General Services Administration. In both cases, these agencies have increased their use of set-asides. As discussed previously, WOSBs tend to win awards more often using set-asides than OtherSBs, such that a prolonged trend toward increasing the use of set-asides by agencies might favor procurement opportunities and success for WOSBs.

Figure 7-2
Percentage of Total Dollars Funded Through Set-Asides, DoD and GSA



We also analyzed the prevalence of set-asides associated with different industries. Specifically, we compiled procurement data by industry, set-aside, and business type to investigate procurement trends for WOSBs active in those industries. Table 7-3 shows the set-aside trends overall and for WOSBs in the top five industries in terms of total dollars awarded during the research period. The results indicate that women-owned small businesses are at least three times as likely as the average business to use set-asides to secure prime Federal procurement dollars in a given industry. Four of the five top industries in terms of total dollars awarded are those in which WOSB set-asides are targeted under the WOSB FCP (part of the 83). It is clear that set-asides are a major component to WOSB procurement in the largest industries as the WOSB percentage of set-asides is significantly higher than the overall percentage of set-asides in these industries. In particular, in NAICS 3364, aerospace product and parts

⁷⁰ We note that this is not necessarily indicative of a gender bias. Rather, veteran-owned business set-aside programs represent over 50 percent of set-aside funding opportunities for the Department of Veterans Affairs. Given potential gender disparities in the veteran population, including business ownership, the results are not necessarily indicative of a gender bias against women by the Department of Veterans Affairs.

manufacturing, WOSB set-asides account for over 12 percent of total awards earned through all set-aside programs, indicating that the WOSB/EDWOSB set-asides are being used effectively in some industries to increase WOSB awards share.

Table 7-3
Set-Aside Analysis by Major Industry NAICS Codes

Industry	Set-Aside			WOSB WOSB Set		
	Total Awards	Awards	% Set Aside	Total	Aside	% Set Aside
5612: Facilities Support Services EDWOSB	\$ 186,764	\$ 21,379	11.4%	\$ 4,818	\$ 3,738	77.6%
5415: Computer Systems Design and Related Services EDWOSB	\$ 281,088	\$ 35,753	12.7%	\$ 19,010	\$ 7,037	37.0%
5413: Architectural, Engineering, and Related Services EDWOSB	\$ 346,096	\$ 21,381	6.2%	\$ 8,356	\$ 3,457	41.4%
5417: Scientific Research and Development Services WOSB	\$ 417,900	\$ 37,360	8.9%	\$ 7,199	\$ 4,933	68.5%
3364: Aerospace Product and Parts Manufacturing	\$ 594,419	\$ 9,457	1.6%	\$ 3,162	\$ 1,164	36.8%

In assessing the efficacy of the WOSB FCP, we focus specifically on the WOSB and EDWOSB set-asides. Table 7-4 provides a summary of statistics related to the contracts awarded under the WOSB and EDWOSB set-asides. After becoming effective during the middle of FY2011, the number of contracts and dollars awarded under the program grew in FY2012, the first full year of the program. Conclusions regarding set-aside use in FY2013 are premature given the partial-year data limitations. Nevertheless, the percentage of total WOSB contracts obtained via the WOSB and EDWOSB set-asides has grown since inception.

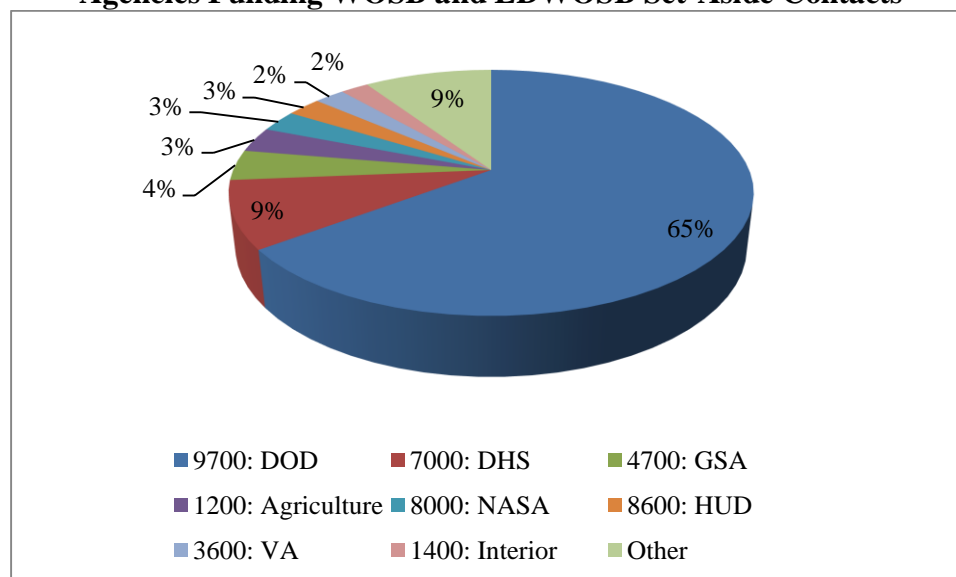
Table 7-4
Analysis of EDWOSB and WOSB Set-Aside Contracts

Dollar Summary (\$)	2011	2012	2013	Grand Total
EDWOSB Set-Aside	\$ 7,956,174	\$ 38,232,563	\$ 531,087	\$ 46,719,823
WOSB Set-Aside	\$ 19,085,953	\$ 30,344,759	\$ 4,433,899	\$ 53,864,611
Combined EDWOSB/WOSB	\$ 27,042,127	\$ 68,577,321	\$ 4,964,986	\$ 100,584,434
Total WOSB Dollars	\$ 14,053,824,590	\$ 11,509,282,763	\$ 1,243,822,899	\$ 26,806,930,253
% of Total WOSB Dollars	0.19%	0.60%	0.40%	0.38%
Contract Count Summary				
EDWOSB Set-Aside	36	176	13	225
WOSB Set-Aside	155	329	68	552
Combined EDWOSB/WOSB	191	505	81	777
Total WOSB Contracts	188,411	182,791	24,534	395,736
% of Total WOSB Contracts	0.10%	0.28%	0.33%	0.20%
Average Contract Value (\$)				
EDWOSB Set-Aside	\$ 221,005	\$ 217,230	\$ 40,853	\$ 207,644
WOSB Set-Aside	\$ 123,135	\$ 92,233	\$ 65,204	\$ 97,581
Average WOSB Value	\$ 74,591	\$ 62,964	\$ 50,698	\$ 67,739

Use of the WOSB set-asides is approximately double that of EDWOSB set-asides from a contract number standpoint, but total dollars awarded on EDWOSB set-aside contracts are closer to the amount of funding on WOSB set-aside contracts. In addition, several agencies account for

the majority of dollars awarded using the EDWOSB and WOSB set-asides. Figure 7-3 shows the break-out of funding by agency for these set-asides.⁷¹

Figure 7-3
Agencies Funding WOSB and EDWOSB Set-Aside Contacts



Twenty-six major agencies funded WOSB contracts through the use of the WOSB and EDWOSB set-asides since implementation of the WOSB FCP in 2011. In contrast, 51 other agencies had yet to implement a WOSB or EDWOSB set-aside given data available as of March 5, 2013. The majority of these agencies had significantly lower funding levels than the 26 agencies that have used the WOSB and EDWOSB set-asides. However, the data indicate that several major agencies with significant funding activity have yet to use a WOSB or EDWOSB set-aside, most notably the Social Security Administration.⁷²

We also analyzed the use of WOSB and EDWOSB set-asides across different industrial sectors. Table 7-5 summarizes the top ten industrial sectors, defined by NAICS code, with WOSBs receiving funding via the WOSB and EDWOSB set-asides. Notably, all ten of these NAICS are part of the 83 NAICS codes that are considered underrepresented or substantially underrepresented in the WOSB FCP. In addition, nine of the ten NAICS codes represent industries in which WOSBs are substantially underrepresented.

⁷¹ The data show that NASA and the Department of Housing and Urban Development (HUD) issued only two and one contracts, respectively, under the WOSB and EDWOSB set-asides since inception. However, these contract awards were in excess of \$5.4 million, representing over 5 percent of total awards under the WOSB and EDWOSB set-asides.

⁷² The Social Security Administration (SSA) has awarded approximately \$11.4 billion in awards since FY2000. While the SSA has not yet awarded a contract using the EDWOSB or WOSB set-asides, the SSA exceeded the 5 percent WOSB thresholds in FY2011 and FY2012.

Table 7-5
Analysis of EDWOSB and WOSB Set-Asides by Major NAICS Code

NAICS	EDWOSB:	WOSB:	Combined	Percent of Grand Contracts	
2382: Building Equipment Contractors (SU)	\$ 11,613,488	\$ 4,660,683	\$ 16,274,171	16.2%	58
2389: Other Specialty Trade Contractors (SU)	\$ 5,072,061	\$ 2,618,820	\$ 7,690,882	7.6%	42
2381: Foundation, Structure, and Building Exterior Contractors (SU)	\$ 6,997,274	\$ 428,591	\$ 7,425,864	7.4%	19
5416: Management, Scientific, and Technical Consulting Services (SU)	\$ 3,396,718	\$ 3,636,084	\$ 7,032,802	7.0%	39
5415: Computer Systems Design and Related Services (SU)	\$ 4,897,017	\$ 1,728,072	\$ 6,625,089	6.6%	22
2371: Utility System Construction (SU)	\$ 5,229,318	\$ 992,425	\$ 6,221,743	6.2%	13
5611: Office Administrative Services (SU)	\$ 1,171,335	\$ 4,480,530	\$ 5,651,865	5.6%	16
6114: Business Schools and Computer and Management Training	\$ 55,000	\$ 4,509,897	\$ 4,564,897	4.5%	27
7223: Special Food Services (SU)	\$ -	\$ 2,824,976	\$ 2,824,976	2.8%	8
Subtotal	\$ 38,432,211	\$ 25,880,078	\$ 64,312,289	63.9%	244
Grand Total	\$ 46,719,823	\$ 53,988,790	\$ 100,708,614		775

Note: "SU" indicates an NAICS WOSBs are "substantially underrepresented" compared to "underrepresented"

The WOSB FCP appears to be working in terms of directing contracts and awards to WOSBs contracting in underrepresented or substantially underrepresented NAICS codes. In fact, of the 83 NAICS identified as fitting the criteria, WOSB or EDWOSBs contracts have been awarded to WOSBs operating in 60 of them, leaving only 23 NAICS that have yet to award an EDWOSB or WOSB set-aside. Table 7-6 presents a summary of these 23 NAICS, including the total amount of contract dollars awarded during the procurement analysis time period, as well as the amount awarded to WOSBs.

Table 7-6
Summary of Designated NAICS without a an EDWOSB or WOSB Set-Aside Award

(\$ - millions)		
NAICS	Total Awards	Awards to WOSBs
3159: Apparel Accessories and Other Apparel Manufacturing (SU)	\$ 10,546.7	\$ 476.8
3231: Printing and Related Support Activities (U)	\$ 1,904.4	\$ 105.5
3321: Forging and Stamping (SU)	\$ 437.4	\$ 47.9
3324: Boiler, Tank, and Shipping Container Manufacturing (SU)	\$ 10,738.3	\$ 135.7
3346: Manufacturing and Reproducing Magnetic and Optical Media (SU)	\$ 1,098.8	\$ 57.1
4881: Support Activities for Air Transportation (SU)	\$ 25,049.3	\$ 201.4
4884: Support Activities for Road Transportation (SU)	\$ 371.5	\$ 60.9
4885: Freight Transportation Arrangement (SU)	\$ 1,059.0	\$ 13.3
4889: Other Support Activities for Transportation (U)	\$ 1,038.6	\$ 223.4
4931: Warehousing and Storage (U)	\$ 3,432.4	\$ 299.0
5121: Motion Picture and Video Industries (SU)	\$ 1,233.1	\$ 118.6
5171: Wired Telecommunications Carriers (U)	\$ 29,043.0	\$ 368.7
5191: Other Information Services (U)	\$ 3,469.5	\$ 205.0
5311: Lessors of Real Estate (SU)	\$ 3,139.1	\$ 411.2
5312: Offices of Real Estate Agents and Brokers (U)	\$ 1,911.6	\$ 193.9
5412: Accounting, Tax Preparation, Bookkeeping, and Payroll Services (U)	\$ 7,575.2	\$ 468.9
5615: Travel Arrangement and Reservation Services (U)	\$ 968.7	\$ 46.0
6242: Community Food and Housing, and Emergency and Other Relief Services (U)	\$ 737.4	\$ 27.1
7115: Independent Artists, Writers, and Performers (SU)	\$ 236.0	\$ 63.2
8111: Automotive Repair and Maintenance (SU)	\$ 2,887.1	\$ 103.4
8114: Personal and Household Goods Repair and Maintenance (SU)	\$ 244.9	\$ 59.9
8129: Other Personal Services (U)	\$ 782.7	\$ 42.2
8139: Business, Professional, Labor, Political, and Similar Organizations (U)	\$ 775.9	\$ 21.9
Note: (SU) indicates an NAICS where WOSB are Substantially Underrepresented, while (U) indicates an NAICS where WOSB are underrepresented		

The largest of these remaining 23 NAICS, in terms of total procurement funding since FY2000 are 4881: Support Activities for Air Transportation and 5171: Wired Telecommunications Carriers.⁷³

As discussed previously, the Department of Defense is the single largest procurement agency in terms of total contracts and dollars awarded, as well as the largest agency using WOSB FCP set-asides. We analyzed the Department of Defense use of EDWOSB and WOSB set-asides in FY2011 through the present. The data show:

- Awards using WOSB FCP set-asides occurred in over 40 industries of the 83 NAICS in which WOSBs are underrepresented or substantially underrepresented;

⁷³ Interestingly, we observed WOSB and EDWOSB set-aside contracts and awards for 63 other NAICS codes that are not included in the 83 codes encompassing underrepresented or significantly underrepresented WOSBs. While the total dollar amount associated with contracts awarded to WOSBs in these NAICS codes was only \$8.3 million, this still represented approximately 8 percent of all awards.

- The single largest NAICS for DoD WOSB FCP set-asides was NAICS 2382: Building Equipment Contractors with 15.4 percent of set-aside dollars associated with this industry; and
- The top four NAICS codes (in terms of DoD dollars awarded using WOSB FCP set-asides) were NAICS codes where WOSBs were substantially underrepresented.

We also analyzed whether DoD set-asides targeted specific industries, including those that might be lower-receipt industries where WOSBs might be disproportionately present. For example, recent NWBC analyses indicate that WOSBs are disproportionately present in low-receipt industries such as Real Estate and Rental and Leasing or Educational Services.⁷⁴ Table 7-7 presents a summary of the DoD use of WOSB FCP set-asides by major industrial category. The majority of set-aside dollars were in “middle-receipt”⁷⁵ industries, primarily Construction or Professional, Scientific and Technical Services.

Table 7-7
Department of Defense WOSB FCP Contract Awards by Industry

Industry	Amount	Industry Receipts
Construction	\$ 29,813,196	Middle
Professional, Scientific, and Technical Services	\$ 9,789,836	Middle
Manufacturing	\$ 8,694,028	High
Administrative and Support and Waste Management and Remediation Services	\$ 5,027,793	Low
Educational Services	\$ 4,044,875	Low
Accommodation and Food Services	\$ 2,862,484	Middle
Information	\$ 2,010,894	Middle
Other Services (except Public Administration)	\$ 913,996	Low
Utilities	\$ 566,226	Middle
Wholesale Trade	\$ 538,823	High
Real Estate and Rental and Leasing	\$ 317,288	Low
Transportation and Warehousing	\$ 239,483	Middle
Retail Trade	\$ 203,775	High
Health Care and Social Assistance	\$ 100,139	Middle
Agriculture	\$ 84,500	Middle
Public Administration	\$ 22,090	Low
Mining	\$ 19,146	High
Low Total	\$ 10,326,042	
Middle Total	\$ 45,466,757	
High Total	\$ 9,455,772	
Note: Classification of Low, Middle and High industry receipts from NWBC "Women in Business 2007-2010" analysis		

⁷⁴ “Women in Business 2007-2010,” NWBC infographic available at <http://www.nwbc.gov/research/new-data-analysis-shows-women-owned-business-thriving-still-facing-obstacles>.

⁷⁵ “High” receipt industries include median receipts in excess of \$500,000, “Middle” receipt industries include median receipts between \$225,000 and \$500,000, and “Low” receipt industries include median receipts below \$225,000.

As a result, we do not observe any inherent bias in using the WOSB FCP set-asides predominantly in industries that are stereotypically women-dominated. In fact, the majority of DoD set-asides are in construction, where NWBC data analysis has recently shown the ratio of MOB to WOBs is 2.7, the highest disparity in ownership among all industrial classifications.⁷⁶

The EDWOSB and WOSB set-aside data provide an indication of the opportunities available to WOSBs to engage in Federal procurement via these set-asides. The previous results illustrate that these opportunities not only span multiple agencies, but also different industry sectors. Another important research objective involves assessing whether the WOSB FCP and use of EDWOSB and WOSB set-asides has increased WOSB Federal procurement activity by encouraging new participants. We performed several analyses which sought to investigate vendor behavior with respect to the EDWOSB and WOSB set-aside program. Table 7-8 illustrates vendor participation under the WOSB FCP and use of WOSB and EDWOSB set-asides.

Table 7-8
Vendor Participation in EDWOSB and WOSB Set-Aside Procurement Opportunities

Vendors awarded at least one contract as a WOSB	81,775
Vendors awarded at least one contract through a WOSB FCP Set-Aside	500
WOSBs awarded at least one WOSB FCP Set-Aside contract as a WOSB	363
WOSBs awarded at least one WOSB FCP Set-Aside contract as an EDWOSB	104
WOSBs awarded at least one WOSB FCP Set-Aside contract as a WOSB and at least one contract as an EDWOSB	33
WOSB vendors whose only contract awards were through a WOSB FCP Set-Aside contract	94

Table 7-8 provides two interesting insights into WOSB procurement activity under the WOSB FCP. First, 94 WOSBs engaged in Federal procurement solely through the use of these set-asides. These represent WOSBs that had no previous experience receiving a contract or award through prime Federal procurement. As a result, almost 20 percent of EDWOSB and WOSB funding went to first-time procurement participants. While we believe this provides solid evidence regarding the benefits of the use of WOSB and EDWOSB set-asides, we anticipate this should be an area of future research to better understand WOSB motivations concerning procurement opportunities using these set-asides. Second, we observe that fewer vendors received an award with an EDWOSB set-aside, although Table 7-4 previously indicated the average award was significantly higher than for vendors who won an award with a WOSB set-aside.

⁷⁶ NWBC infographic, op cit.

Given the reliance on set-asides to meet Federal procurement objectives for a number of WOSBs active under the WOSB FCP, we investigated procurement activity more closely for the 500 vendors who received awards via the EDWOSB and WOSB set-asides. Additional data analysis confirms our position that the WOSB FCP has helped stimulate Federal procurement activity for WOSBs who previously had little or no experience being awarded a contract. Specifically, we observed:

- Forty percent of vendors receiving a WOSB or EDWOSB set-aside contract had less than two years of activity in receiving Federal procurement activity and awards, indicating these were relatively “new” WOSBs with respect to Federal procurement.
- WOSB set-asides were evenly dispersed among different activity levels for WOSBs with procurement activity in more than three years (e.g., years receiving contracts and awards), with a high of 45 vendors awarded contracts in three years and a low of 13 vendors awarded contracts in twelve different fiscal years.
- Confirming our previous analysis regarding concentration, we observe that 33 vendors were awarded contracts in every fiscal year of our analysis and furthermore, the total awards associated with these vendors (i.e., including award values outside of the EDWOSB and WOSB set-asides) represented almost 50 percent of the total contract dollars (i.e. including EDWOSB, WOSB, and other awards) garnered by the 500 vendors who received at least one WOSB or EDWOSB set-aside contract.

As a final component of our vendor-specific analysis regarding the use of WOSB and EDWOSB set-asides, we analyzed observable changes in vendor behavior that were apparent from the use of the WOSB and EDWOSB set-asides. The data were inconclusive, even at a vendor-specific level, to assess the particular motivations concerning use of the EDWOSB and WOSB set-asides. As shown in Table 7-9, there was insufficient data to clearly contrast the use of only EDWOSB and WOSB set-asides versus the full scope of procurement activity for the 500 vendors.

Table 7-9
Contract Analysis of Vendors Receiving an EDWOSB or WOSB Set-Aside Contract

Year	No Set Aside (\$)	ED/WOSB Set Aside (\$)	Other Set Aside (\$)	Grand Total (\$)	Set Aside Total (\$)	Percent Set Aside
2000	\$ 59,678,864	\$ -	\$ 54,539,630	\$ 114,218,494	\$ 54,539,630	47.8%
2001	\$ 89,000,054	\$ -	\$ 68,979,260	\$ 157,979,315	\$ 68,979,260	43.7%
2002	\$ 83,478,424	\$ -	\$ 92,719,507	\$ 176,197,931	\$ 92,719,507	52.6%
2003	\$ 137,944,249	\$ -	\$ 101,960,148	\$ 239,904,397	\$ 101,960,148	42.5%
2004	\$ 180,381,309	\$ -	\$ 99,531,051	\$ 279,912,361	\$ 99,531,051	35.6%
2005	\$ 234,098,584	\$ -	\$ 159,217,963	\$ 393,316,546	\$ 159,217,963	40.5%
2006	\$ 262,812,760	\$ -	\$ 272,958,965	\$ 535,771,725	\$ 272,958,965	50.9%
2007	\$ 262,980,645	\$ -	\$ 275,216,336	\$ 538,196,981	\$ 275,216,336	51.1%
2008	\$ 325,739,541	\$ -	\$ 306,970,409	\$ 632,709,949	\$ 306,970,409	48.5%
2009	\$ 348,512,720	\$ -	\$ 327,705,523	\$ 676,218,243	\$ 327,705,523	48.5%
2010	\$ 333,186,084	\$ -	\$ 478,014,457	\$ 811,200,541	\$ 478,014,457	58.9%
2011	\$ 431,726,606	\$ 11,733,256	\$ 580,466,831	\$ 1,023,926,693	\$ 592,200,087	57.8%
2012	\$ 416,569,478	\$ 33,148,887	\$ 545,105,547	\$ 994,823,911	\$ 578,254,433	58.1%
2013	\$ 53,697,545	\$ 3,203,193	\$ 37,453,475	\$ 94,354,213	\$ 40,656,668	43.1%

The primary barrier to this analysis is that certain vendors receiving WOSB and EDWSOB set-asides have significant procurement activity, including volatility in terms of the number and amount of contracts awarded in years prior to the WOSB FCP. As a result, the data do not shed light on the motivations of these vendors, i.e., a clear shift in contracts and dollars awarded through the EDWOSB and WOSB set-asides either in addition to, or at the expense of, other procurement activities.⁷⁷

Despite our inability to investigate causal relationships between observed data differences and vendor behavior related to the use of the EDWOSB and WOSB set-asides, the research in this section provides several interesting observations and conclusions. We summarize our conclusions, with emphasis added for our most noteworthy conclusions and observations, as follows:

- WOSBs tend to engage in Federal procurement through the use of set-asides more frequently, or with more success, than do OtherSBs when comparing results of set-aside use with contracts and amounts awarded outside the set-aside programs.
- ***WOSBs have increased their procurement share through set-aside programs over time.***
- WOSBs have been particularly successful with the 8A and HubZone set-asides in comparison to procurement activity absent set-asides.
- ***The introduction of the WOSB FCP and the EDWOSB and WOSB set-asides has generated in excess of \$100 million in contract awards restricted to WOSBs.***

⁷⁷ We observed similar results when examining the number of contracts awarded to these WOSBs.

- *The WOSB FCP has facilitated entry of new participants through the use of the WOSB and EDWOSB set-asides.*
- Many agencies have implemented the use of the EDWOSB and WOSB set-asides, although several large agencies have yet to do so.
- The use of the EDWOSB and WOSB set-asides are successfully targeting NAICS industries where WOSBs are underrepresented or significantly underrepresented, however, not all of the 83 designated NAICS have executed contract awards using these set-asides.
- *Consistent with general procurement trends for WOSBs, vendors with more longevity and stability (i.e., receiving contracts in multiple fiscal years) were able to secure a larger portion of contracts through the use of the WOSB and EDWOSB set-asides.*

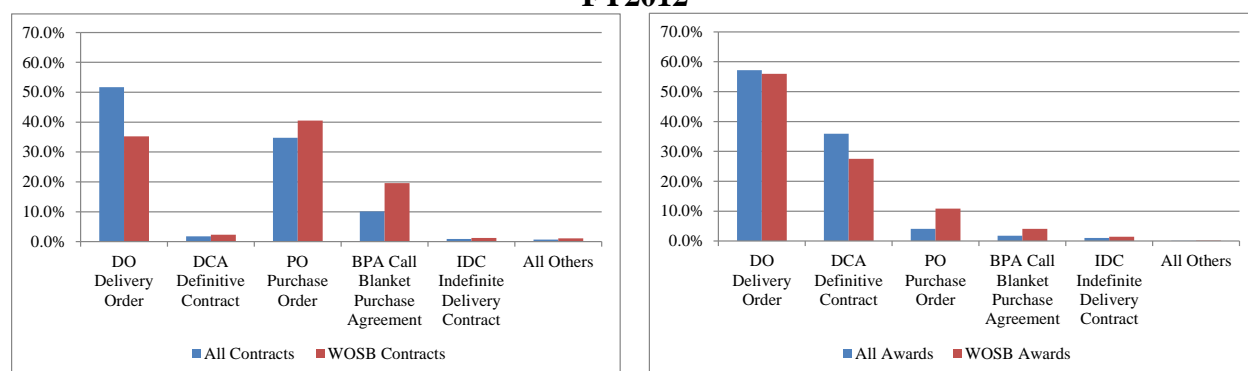
Chapter 8. Additional Procurement Analyses

In this chapter, we focus on additional and supplemental analyses related to WOSB procurement trends for other FPDS-NG variables, including contract action type, type of contract pricing, solicitation procedures, extent competed, reason not competed and product service code. Ideally, we sought information that might support or alternatively, clarify, issues we identified in prior chapters. We refer the reader to our companion “Data Book” for detailed analyses related to these other FPDS-NG variables and limit this section to focusing on the following main observations by variable. We summarize our conclusions, with emphasis added for our most noteworthy conclusions and observations, for the following variables.

Contract Action Type⁷⁸

We analyzed the different contract action types for WOSB contracts compared to non-WOSB contracts during the procurement analysis time period. The majority of all contracts are either “Delivery Order” contracts or “Purchase Order,” although there is a more recent trend toward Delivery Order contracts. In contrast, the majority of contract awards occurred under delivery orders or “Definitive Contracts.” Figure 8-1 provides a break-out of the contract awards by contract action type for FY2011 through FY2012 contracts. The left panel includes data on the percentage of total contracts awarded, while the right panel includes data on the award amounts. Comparison of the two panels illustrates that the average award on definitive contracts was several magnitudes higher than the average awards on other contract action types.

Figure 8-1
Analysis of Contracts and Dollar Awards by Contract Action Type – FY2007 through FY2012



From our review of the data and underlying contract award amounts, we concluded:

- ***Between FY2007 and FY2012, the most common type of contract award for WOSBs was a purchase order, followed closely by delivery orders.***

⁷⁸ Given the focus of our analysis was on contracts as opposed to actions, we limit the analysis to the major observed contract action types associated with the highest dollar values.

- In contrast, for the population of all businesses, the number of contracts awarded via purchase order declined sharply in FY2008, and the number of delivery order contracts almost doubled the number of purchase order contracts.
- *One reason for potential disparities in award levels between WOSBs and non-WOSBs is that the average purchase order contract award was only 12 percent the level of a delivery order award. Given that WOSBs favored purchase orders more so than non-WOSBs, this facilitated a lower level of award compared to non-WOSBs.*

Type of Contract Pricing

We analyzed the type of contract pricing associated with each contract in our dataset. The most common type of contract pricing is “Firm Fixed Price” which represents a contract with a specified dollar amount typically not subject to any adjustment. During the procurement analysis time period, 75 percent of all contracts and 69 percent of dollar awards were categorized as Firm Fixed Price. We analyzed the type of contract pricing for WOSBs versus the general pool and found:

- The most common type of contract pricing on WOSB contracts between FY2000 and FY2012 was also “Firm Fixed Price,” as by FY2012, 88 percent of contracts awarded to WOSB were “Firm Fixed Price,” representing 83 percent of total dollars awarded.
- The second most frequently used type of contract pricing was “Cost Plus Fixed Fee.” This type of contract pricing accounted for approximately 13 percent of all dollar awards in FY2012 and 8 percent of WOSB dollar awards.
- The average Firm Fixed Price award for WOSBs has fallen from approximately \$78 thousand in FY2009 to approximately \$59 thousand in FY2012.
- The WOSB Firm Fixed Price average award has been between 52 and 59 percent of the total average Firm Fixed Price contract since FY2007.⁷⁹

Solicitation Procedures

We examined the different types of solicitation procedures used by WOSBs, in comparison to the general population. Our observations include:

- We observed similar procurement trends across different business types involving solicitation procedures, as both WOSBs and non-WOSBs tend to win contracts under a mix of procedures subject to “multiple award fair opportunity,” “negotiated proposal/quote,” “simplified acquisition,” and “only one source.”
- Although general solicitation procedure trends are similar across business types, we observed that WOSB procurement favored simplified acquisition over the other solicitation procedures when compared to the general population.

⁷⁹ We are comparing the average awards across all types of contracts in the general pool, not just small business contracts.

Extent Competed

Each contract contained information on the extent competed, including whether the contract award was subject to competition. For the general population of all contracts and awards, the two most prevalent “extent competed” situations were “Full and Open Competition” and “Not Competed,” representing 49 percent and 28 percent of contract dollars awarded, respectively, during the procurement analysis time period. These ratios have been relatively consistent since FY2000, although a more recent trend has been the growth of “Competed under SAP”⁸⁰ procurement. We observed the following observations from our analysis of WOSB procurement trends:

- *Analysis of the extent competed variable indicates that a higher percentage of WOSB contract awards occur under some level of competition than the rest of the general population, as defined by contracts awarded under the following extent competed categories:*
 - *Full and Open Competition*
 - *Competitive Delivery Order*
 - *Full and Open Competition after Exclusion of Sources*⁸¹
 - *Competed under SAP [Simplified Acquisition Procedures]*
- In FY2012, 85.0 percent of WOSB contracts were awarded under some level of competitive procurement actions, while 77.8 percent of dollars were awarded to WOSBs under some level of competitive procurement actions.
- In contrast, only 79.7 percent of total contracts and 69.1 percent of total dollars were awarded under some level of competitive procurement actions during FY2012.
- Seventy percent of contract dollars awarded through WOSB FCP set-asides were subject to “Full and Open Competition after Exclusion of Sources,” with the remaining 30 percent largely competed under SAP.

Reason Not Competed

In conjunction with the extent competed analysis, we also examined the reason not competed procurement variable for the general population and subset of WOSBs. Our analysis found:

- Between FY2009 and FY2012, approximately 75 percent of “non-competitive” WOSB dollar awards were categorized under “Other – Authorized by Statute.”

⁸⁰ SAP refers to Simplified Acquisition Procedures.

⁸¹ We recognize that this category inherently assumes restriction, but not elimination of competition. As a result, our use of “some level of competition” reflects our analysis of excluding contracts awarded specifically under “Not Available for Competition,” “Not Competed,” “Follow On to Competed Action,” “Not Competed under SAP” or “Non-Competitive Delivery Order.”

- In contrast, only one-third of all contracts were categorized under this code, with the majority of non-competitive contracts awarded under non-competitive simplified acquisition procedures.
- The second largest category for WOSB non-competitive contracts was “Only One Source.”
- One area where we observed a major difference in non-competitive procurement trends involved Unique Source contracts – for WOSBs the percentage of non-competitive dollars awarded using unique source contracts ranged from 1.3 to 1.9 percent between FY2009 and FY2012, while this percentage was between 12 and 19 percent for the general population.

Product-Service Code

As part of our analysis, we also analyzed the specific product-service codes associated with contracts won by WOSBs to determine if there were any general trends concerning the types of activities WOSBs were performing in contracts awarded through prime contracts. Our analysis indicated:

- Approximately 5.5 percent of all WOSB dollar awards between FY2000 and FY2013 were associated with the product-service code (PSC) R499: Other Professional Services.
- The top five PSC codes for WOSB accounted for 18.3 percent of all WOSB dollar awards between FY2000 and FY2013.
- The majority of dollars associated with WOSB contract awards involved a service-related PSC.
- We identified 281 different product-service codes associated with contracts awarded through the WOSB FCP. Similar to overall WOSB contract award trends, the majority were service-related.
- Table 8-1 summarizes the top 10 product-service codes associated with WOSB contract dollar awards.

Table 8-1
Analysis of Top 10 PSCs for WOSBs
(in terms of dollar awards FY2000-FY2013)

(\$ - millions)						
PSC	None	SBA	Set-Aside		Grand Total	% Set Aside
			WOSB/ EDWOSB	All Other Set Asides		
R499: OTHER PROFESSIONAL SERVICES	\$ 3,864.04	\$ 1,924.45	\$ 5.26	\$ 2,332.54	\$ 8,126.29	52.5%
D399: OTHER ADP & TELECOMMUNICATIONS SVCS	\$ 4,679.79	\$ 930.78	\$ 3.58	\$ 1,331.87	\$ 6,946.02	32.6%
R425: ENGINEERING AND TECHNICAL SERVICES	\$ 2,981.56	\$ 1,047.26	\$ 0.39	\$ 890.92	\$ 4,920.13	39.4%
R408: PROGRAM MANAGEMENT/SUPPORT SERVICES	\$ 2,099.87	\$ 749.68	\$ 2.44	\$ 1,005.42	\$ 3,857.41	45.6%
R699: OTHER ADMINISTRATIVE SUPPORT SVCS	\$ 1,524.08	\$ 477.98	\$ 4.68	\$ 1,337.22	\$ 3,343.95	54.4%
Z199: MAINT-REP-ALT/MISC BLDGS	\$ 484.81	\$ 182.19	\$ 2.46	\$ 1,974.04	\$ 2,643.49	81.7%
R799: OTHER MANAGEMENT SUPPORT SERVICES	\$ 1,394.21	\$ 334.91	\$ 0.36	\$ 812.78	\$ 2,542.26	45.2%
D301: ADP FACILITY MANAGEMENT	\$ 1,461.64	\$ 547.59	\$ -	\$ 513.31	\$ 2,522.54	42.1%
Y199: CONSTRUCT/MISC BLDGS	\$ 432.89	\$ 412.34	\$ 2.61	\$ 1,557.67	\$ 2,405.50	82.0%
S206: GUARD SERVICES	\$ 923.50	\$ 579.64	\$ -	\$ 707.38	\$ 2,210.52	58.2%

Chapter 9. Key Conclusions and Future Research

The primary objective of our analysis was to investigate the potential impact of the WOSB FCP on WOSB procurement activity. However, as the enactment of WOSB FCP and the implementation of the EDWOSB and WOSB set-aside program only became effective in early 2011 (or mid FY2011), there are limited procurement data available to conduct analyses post-WOSB FCP enactment. In most instances, we observed an increase in the share of contracts and award dollars received by WOSBs over time, including after the enactment of the WOSB FCP. What remains unclear is whether the WOSB FCP had a significant impact on WOSBs obtaining Federal procurement awards or if other causal factors contributed to the more recent success of WOSBs in increasing prime Federal procurement share. Regardless, it is clear that WOSBs are winning prime Federal contracts at a greater rate than they have in the past. This is true across different agencies and industries, although as we noted there are still areas for improvement with certain agencies in terms of meeting the 5 percent contract and dollar thresholds. Our principal conclusions include:

- WOSBs have typically increased the proportionate share of contracts awarded and dollars awarded year over year from FY2000 through FY2012.
- Despite WOSB progress, average WOSB awards remain lower than those of OtherSBs.
- The contract award gender gap appears to be closing in select industries, most notably in NAICS 3359 (Other Electrical Equipment and Component Manufacturing), NAICS 5416 (Management, Scientific and Technical Consulting Services), and NAICS 6214 (Outpatient Care Centers). Each of these NAICS codes represent an industry in which WOSBs are substantially underrepresented.⁸²
- The number of industries in which WOSB awards share is greater than WOSB contract share remains low, indicating that on average, WOSBs are earning less money per contract than non-WOSBs in the majority of industries.
- Within the 83 underrepresented NAICS, WOSBs are on average meeting the contract threshold, but remain underrepresented in terms of awards share.
- Almost half of all WOSB vendors receive contracts only in a single fiscal year, indicating a high rate of turnover. However, it is likely some of these have remained active in procurement but contracted as a different business type (e.g., change in gender ownership), as a WOSB bidding on, but not receiving contracts, through subcontracting, or as a relatively new vendor with anticipated participation and awards post-FY2012.
- WOSB vendors with long periods of activity across different fiscal years tend to receive a greater share of contract dollars.
- WOSB contract dollars are highly concentrated among select vendors in each fiscal year, although there is often a shift in the specific vendors between fiscal years (i.e., it is not

⁸² This represents a sample of NAICS where we observe a decrease in the gap between average awards of WOSBs and non-WOSBs. We refer the reader to our “Data Book” for analyses on each NAICS.

necessarily the same vendors receiving disproportionately large shares of awards year after year).

- WOSBs have increased their procurement share through set-aside programs over time.
- The introduction of the WOSB FCP and the EDWOSB and WOSB set-asides has generated more than \$100 million in contract awards restricted to WOSBs.
- The WOSB FCP has facilitated entry of new participants through the use of the WOSB and EDWOSB set-asides.
- Consistent with general procurement trends for WOSBs, vendors with more longevity and stability (i.e., receiving contracts in multiple fiscal years) were able to secure a larger portion of contracts through the use of the WOSB and EDWOSB set-asides.
- Between FY2007 and FY2012, the most common type of contract award for WOSBs was a purchase order, followed closely by delivery orders.
- One reason for potential disparities in award levels between WOSBs and non-WOSBs is that the average purchase order contract award was only 12 percent the level of a delivery order award. Given that WOSBs favored purchase orders more so than non-WOSBs, this facilitated a lower level of award compared to non-WOSBs.
- Analysis of the “extent competed” variable indicates that a higher percentage of WOSB contract awards occur under some level of competition than the rest of the general population.

Lastly, while the quantitative results do not provide definitive proof that the WOSB FCP program is working as intended, the data and analyses raise several different avenues for additional research. These include:

- What other exogenous factors (e.g., non-FPDS-NG data elements) influence WOSB procurement participation and winning of awards through the WOSB FCP?
- Can we gain additional insight into WOSB competitive behavior by analyzing WOSB participation (e.g., bidding on Federal prime contracts) as opposed to solely analyzing awards?
- Does an increased effort in subcontracting detract from WOSBs pursuing and winning prime awards?
- Do we observe regional differences based on WOSB geographic dispersion – both in general terms by regions of the United States (e.g., West versus Northeast), as well as for rural versus urban participation?
- What industry specific factors might influence WOSB procurement behavior?
- Do we tend to observe WOSBs winning procurement awards in industries with different characteristics (e.g., low-wage, service-oriented) than non-WOSBs?