

Evaluation of the Small Business Procurement Goals Established in Section 15(g) of the Small Business Act

**A Report Pursuant to Section 1631(d) of the
National Defense Authorization Act of 2013**

by

**Henry B. R. Beale
Microeconomic Applications, Inc.
Washington, D.C., 20016**

for



under contract number SBA HQ-13-M-0102

Release Date: June 2014

This report was developed under a contract with the Small Business Administration, Office of Advocacy, and contains information and analysis that were reviewed by officials of the Office of Advocacy. However, the final conclusions of the report do not necessarily reflect the views of the Office of Advocacy.

TABLE OF CONTENTS

EMBARGOED.....	i
EXECUTIVE SUMMARY	vi
I. INTRODUCTION.....	1
II. PROCUREMENT GOALS.....	3
A. Origins of Goaling.....	3
B. Conceptual and Practical Considerations	6
C. Agency Goals	8
D. Developments in Setting Agency Goals Since 2003.....	10
E. Exclusions.....	12
F. Goaling and Small Business Size Standards.....	16
G. Observations.....	16
H. Recommendations	17
III. DIRECT PROCUREMENT	19
A. Analytical Approach.....	20
1. Data.....	20
2. Assessment Issues.....	24
B. Results at the Sector Level	25
1. Levels of Procurement, by Sector.....	26
2. Procurement From Small Business.....	28
3. Procurement From Small Business Subclasses.....	30
C. CROSS-SECTOR ANALYSIS	38
1. Small-Business Participation	39
2. Concentration of Procurement Obligations.....	52
3. Observations	67
D. Recommendations	67
IV. SUBCONTRACTING.....	69
A. Requirements.....	69
B. Reported Results.....	71
C. Recommendations	72
V. BARRIERS TO SMALL-BUSINESS PROCUREMENT	73
A. Availability and Utilization of Small Business	74
1. A Note on Disparity.....	74
2. Interaction of Availability and Utilization.....	74
3. Capabilities of Small Businesses	77
4. Market Research	78
B. Priorities and Incentives	79

C. Concentration of Contracting Dollars.....	80
1. Procurement Policy and Practices.....	80
2. Deconsolidating Procurement.....	84
D. Recommendations	90
APPENDICES	92
Appendix A FY2014 Small-Business Prime Contract Goal-Setting Methodology	93
Appendix B FY2012 Goaling Exclusions.....	96
Appendix C Data Sources and Issues	98
1. FPDS Data.....	99
2. Economic Census Data.....	102
3. SAM Data.....	104
4. eSRS Data	105
5. FFATA FSRS Data	107
6. Observations.....	107
7. Recommendations	107
Appendix D Definitions of Small-Business Subclasses	108
Appendix E Count of Unique DUNS Numbers, by Level of Industry Disaggregation.....	109
Appendix F Detailed Industry Analysis.....	111
1. Agriculture, Forestry, Fishing and Hunting	112
2. Mining, Quarrying, and Oil and Gas Extraction	115
3. Utilities	117
4. Construction	119
5. Manufacturing	122
6. Wholesale Trade.....	146
7. Retail Trade.....	149
8. Transportation and Warehousing	154
9. Information Services	160
10. Finance and Insurance.....	164
11. Real Estate and Rental and Leasing	167
12. Professional, Scientific, and Technical Services.....	170
13. Management of Companies and Enterprises.....	176
14. Administrative and Support and Waste Management and Remediation Services	177
15. Educational Services	180
16. Health Care and Social Assistance.....	183
17. Arts, Entertainment, and Recreation	187
18. Accommodation and Food Services.....	190
19. Other Services (except Public Administration).....	192
Appendix G Procurement Shares of Small Business.....	197

Appendix H Procurement Shares of Socially and Economically Disadvantaged Small Businesses	220
Appendix I Procurement Shares of 8(A) Businesses	226
Appendix J Procurement Shares of Veteran-Owned Small Businesses	232
Appendix K Procurement Shares of Service-Disabled Veteran-Owned Small Businesses	238
Appendix L Procurement Shares of Woman-Owned Small Businesses	244
Appendix M Procurement Shares of HUBzone Businesses	250
Appendix N 13 CFR 125.2, Prime Contracting Assistance.....	256
Glossary	263
References.....	265
U.S. General Services Administration, <i>Maintenance, Repair & Operations Supplies (FSSI MRO)</i> , www.gsa.gov/portal/content/187135	266

LIST OF TABLES

Table 1: Government-Wide Procurement Achievement—Percentages of Prime Contract Dollars.....	10
Table 2: Small-Business Procurement Shares by Sector	27
Table 3: Small-Business Procurement Rates and Level of Industry Sector Procurement.....	28
Table 4: Small-Business Procurement Rates and Small Business Share of Contractors.....	29
Table 5: Socially and Economically Disadvantaged Business Procurement Shares, by Sector	31
Table 6: 8(a) Business Procurement Shares, by Sector	32
Table 7: Veteran-Owned Small-Business Procurement Shares, by Sector.....	33
Table 8: Service-Disabled Veteran-Owned Small-Business Procurement Shares, by Sector	34
Table 9: Woman-Owned Small-Business Procurement Shares, by Sector.....	35
Table 10: HUBZone Business Procurement Shares, by Sector	36
Table 11: Subclass Procurement Rates as Percentages of Small-Business Procurement Rates, by Sector	37
Table 12: Measures of Small-Business Participation in Industries With Over \$500 Million in Procurement and With Small-Business Procurement Rates of Less than 10 Percent	41
Table 13: Measures of Small-Business Participation in Industries With Over \$500 Million in Procurement and With Small-Business Procurement Rates Between 10 Percent and 25 Percent.....	44
Table 14: Measures of Small-Business Participation in Industries With Over \$500 Million in Procurement and With Small-Business Procurement Rates of More than 25 Percent	47
Table 15: Measures of Small-Business Participation in Industries With Over \$500 Million in Obligations, by Class of Small-Business Procurement Rates.....	51
Table 16: Obligations and Number of Industries, by Sector, for Six-Digit Industries With Over \$500 Million in Procurement.....	53
Table 17: Obligations, Firms, and Revenue Ratios in Six-Digit Industries with Over \$10 Billion in Procurement.....	54
Table 18: Comparison of Small-Business Procurement Rates and Revenue Ratios in Six-Digit Industries with Over \$10 Billion in Procurement.....	55
Table 19: Obligations and Firms, By Size, in Six-Digit Industries With \$1 Billion to \$10 Billion in Procurement.....	56
Table 20: Comparison of Small-Business Procurement Rates and Revenue Ratios in Six-Digit Industries With \$1 Billion to \$10 Billion in Procurement.....	60
Table 21: Obligations, Firms, and Revenue Ratios in Six-Digit Industries with \$500 Million to \$1 Billion in Procurement.....	62

Table 22: Comparison of Small-Business Procurement Rates and Revenue Ratios in Six-Digit Industries With \$500 Million to \$1 Billion in Procurement..... 64

Table 23: Government-Wide Procurement Goal Achievement for Subcontracts 71

ACRONYMS

8(a)	Section 8(a) of the Small Business Act
DUNS Number	Dun & Bradstreet (D&B) business identification number
eSRS	electronic Subcontracting Reporting System
FASA	Federal Acquisition Streamlining Act of 1994
FFATA	Federal Funding Accountability and Transparency Act
FPDS-NG	Federal Procurement Data System–Next Generation
FSRS	FFATA Subaward Reporting System
FSSI	Federal Strategic Sourcing Initiative
HUBZone	Historically Underutilized Business Zone
IDV	Indefinite Delivery Vehicles
ISR	Individual Subcontract Report
NAICS	North American Industry Classification System
NDAA	National Defense Authorization Act for Fiscal Year 2013
OFPP	Office of Federal Procurement Policy
OGC	SBA Office of Government Contracting
OSDBU	Office of Small and Disadvantaged Business Utilization
PCR	Procurement Center Representative
SAM	System for Award Management
SBS	Small Business Specialist
SDB	Socially and Economically Disadvantaged Small Business
SDVOSB	Service-Disabled Veteran-Owned Small Business
SSR	Summary Subcontract Report
VOSB	Veteran-Owned Small Business
WOSB	Woman-Owned Small Business

EXECUTIVE SUMMARY

Purpose

The Small Business Act of 1953 sets out the policy objective that small businesses receive a “fair proportion of the total purchases” of the federal government. Decades later, Congress established quantitative national goals for small-business procurement (now 23 percent) and for several socioeconomic subclasses of small business, including socially and economically disadvantaged businesses (SDB) (5 percent), woman-owned small businesses (5 percent) small businesses owned by veterans with service-connected disabilities (3 percent), and HUBZone businesses (3 percent).¹ These goals also apply to subcontracting by large prime contractors. In parallel, Congress established procurement programs for these demographic subclasses and for designated HUBZones. Some of these goals have not been met. (SDBs are the principal exception.) The Small Business Administration has the responsibility for overseeing and negotiating agency goals that add up to the national goals. The SBA also publishes data—by agency but not by industry—on the procurement rates actually achieved.

The extent to which the failure to meet goals may have been due to unavailability or underutilization of small and subclass businesses is of considerable interest—particularly for subclasses where courts require a showing of disparity (low participation) before allowing a procurement program targeted to that subclass. Considering the continuing shortfall, Congress—in the National Defense Authorization Act for FY 2013—ordered an “independent assessment of the small business procurement goals,” including:

- Description of the industry and size/socioeconomic composition of federal prime contractors and subcontractors and of “domestic business concerns”;
- The process of establishing specific procurement goals;
- The quality and availability of data on prime contracting and subcontracting; and
- Barriers within procurement practices that inhibit maximum practicable utilization of small-business concerns and small-business subclass concerns.

¹ The Historically Underutilized Business Zone (HUBZone) Program is a set-aside program for small businesses located in designated zones with high unemployment and low median income.

Overall Findings

Procurement is highly concentrated in a few industries. Small-business procurement rates vary widely, both across industries and within industries at all levels of NAICS detail. There is a tendency for small-business rates to be relatively low in industries with high concentrations of procurement. Procurement rates for socioeconomic subclasses of small business generally reflect patterns of small-business procurement rates, but variability among industries and subclasses is too complex to be summarized briefly.

In any industry, the share of contractors that are small (or in a subclass) depends on the availability of small businesses and the rate at which they are utilized (or participate). Low (or high) availability rates, participation rates, and/or contractor shares can be correlated with low (or high) small-business procurement rates in individual industries. These measures of availability and utilization, however, overlap and often offset each other, and none of them varies sufficiently or consistently enough across industries to explain the large differences in procurement rates. Industries with very low small-business procurement rates frequently have small-business contractor shares at or near average. Shortfalls of small-business procurement dollars (relative to goals) occur primarily in industries with high levels of procurement, very low small-business procurement rates, and high concentrations of procurement dollars in a relatively small number of businesses.

Setting goals is complex. Procurement goals have, in effect, two definitions—a quantitative number (23 percent) and a qualitative concept (“maximum practicable opportunity”). Achievement of goals (the measured procurement rate) is subject to manipulation by changes in the applicable size standard—without any real shift in procurement. In any one industry or agency application, these two definitions are unlikely to coincide. In any given application, historical performance may differ so much from the quantitative goal that the goal’s precise value is irrelevant. The SBA has responsibility for ensuring that agency goals add up to the national goals—a difficult task because agency performance varies so greatly. The SBA has no authority beyond negotiation and moral suasion, and has had no benchmarks other than historical performance. The SBA has recently developed a promising methodology for estimating opportunity for expanding small-business procurement. The methodology finesses the difficulties of making direct interagency comparisons by first breaking procurement down by

industry and agency office and then using national and agency procurement rates as benchmarks to estimate opportunities industry by industry.

Substantial expansion of small-business procurement will require progress in identifying and breaking out requirements suitable for available small businesses—particularly in industries with high concentrations of procurement. Six-digit industry data are not detailed enough to show where such opportunities lie; market research and related activities are required. Inertia about existing practices, inadequate ongoing leadership emphasis on small-business procurement as a priority, and a dearth of incentives contribute to barriers to small business. Policies with other objectives (e.g., budgetary savings) can undermine incentives for small-business procurement. Anti-bundling regulations are a helpful corrective measure, but they are limited to defending against new bundling. SBA Procurement Center Representatives (PCRs) and Offices of Small and Disadvantaged Business Utilization (OSBDUs) are positioned to advocate for small business in real time during the procurement process. Because they represent multiple federal buying activities, PCRs are stretched exceedingly thin.

Highlights

- At the broad sector level (two-digit NAICS industry), 66.5 percent of all federal procurement is from two (of 19) sectors. At the six-digit industry level, 53.6 percent of all procurement is from 13 industries, and 83.8 percent of procurement is from 70 industries (out of a total of 1,146 individual industries).
- Among the four sectors with the highest levels of procurement, the small-business procurement rate ranges from 11.7 percent in Manufacturing (31-11) to 44.8 percent in Construction (23). Among the 21 manufacturing subsectors, two have small-business procurement rates of 6.1 percent or less, and eight have rates over 40 percent.
- Of 13 industries with over \$10 billion in procurement, five have small-business procurement rates below 10 percent, and four more have rates between 10 percent and 20 percent. Of 57 industries with between \$1 billion and \$10 billion in procurement, 21 have small-business procurement rates below 10 percent, and nine more have rates between 10 percent and 20 percent.
- Of the nine industries with over \$10 billion in procurement and small-business procurement rates below 20 percent, the share of contractors that are small businesses

is at or above the all-industry average (67 percent) in four and within four percentage points (over 63 percent) in three others.

- The nine industries with over \$10 billion in procurement and small-business procurement rates below 20 percent account for 42.8 percent of all procurement. They have a collective small-business procurement rate of 9.9 percent. Relative to the 23-percent national goal, this represents a small-business procurement shortfall of \$28.485 billion.
- The ratio of average procurement dollars per large business to average procurement dollars per small business (the “revenue ratio”) reflects concentration of procurement dollars to a relatively few large businesses. Average revenue per business reflects both size and number of contracts. Among 24 industries with over \$500 million in procurement and small-business procurement rates of 5 percent or less, all but three industries have revenue ratios of at least 25 (and one third of these have revenue ratios over 100). Of 69 industries with over \$500 million in procurement and small-business procurement rate over 10 percent, only one industry has a revenue ratio over 25 (and 57 of these industries have revenue ratios of 10 or less).
- A number of agencies and types of procurement have been excluded from goaling computations because they were inaccessible to small businesses or outside the scope of small-business programs. The small-business procurement rate for procurement that is excluded from goaling computations is 7.3 percent—higher than the small-business procurement rate in 19 of the 70 industries with procurement over \$1 billion.
- Procurement Center Representatives (PCRs) are spread thin. Each PCR serve an average of more than 13 procurement offices—most not local and some in different states. They do not have their own staffs, although the agency OSDBU assigns a small-business technical advisor in each office to assist them. Nearly half (25 of 61) of the PCR positions are combined with one or more other functions—Commercial Market Representative, Certificate of Competency Specialist, and/or Small Business Size Determination Specialist. As of May 2013, seven of the 61 PCR positions were vacant. Ten months later, only one vacancy had been filled.

Scope & Methodology

The study utilized data from the Federal Procurement Data System–Next Generation (FPDS–NG) and the System for Award Management (SAM), and attempted to use data from the electronic Subcontracting Reporting System (eSRS).

- FPDS–NG is the federal system used to record detailed data on actions taken on prime contracts. The study used FPDS FY 2012 data on contract actions (obligations and designated NAICS industry) and contractors (DUNS number, size, and demographic characteristics). The data covered all procurement (including procurement that was being excluded for purposes of measuring goaling results).
- SAM is an administrative system in which federal contractors must register and prospective federal contractors may register to make their availability known. Registration in SAM was used as the measure of a business’s availability (willing and able) for federal contracting. SAM data included counts of SAM registrants by industry and by size and demographic characteristics, collected as of late December 2013. (SAM is continually updated.)
- eSRS is the system in which data on subcontract obligations and subcontractor size and demographic characteristics are reported. eSRS contains no industry data on subcontractors, however, and this data source was not useful for this study.

All data sources provide data at the six-digit NAICS industry level of detail.

Data sources had several limitations. As noted, eSRS data do not include the necessary industry data. FPDS–NG was the only data set with easy access adequate for research. FPDS data contain internal inconsistencies of a sort reminiscent of Inspector General reports detailing errors in making awards to small and subclass businesses. The FPDS design makes it difficult to distinguish individual small contracts from task orders on multiple task or delivery-order contracts.

Data were transformed into measures (counts and percentages) of the involvement of businesses that are small or in socioeconomic subclasses of small businesses at different stages of procurement. For each industry, the measures included:

- Availability (percent of SAM registrants that are small and sub-class businesses);
- Participation (percent of small and subclass registrants that hold contracts);
- Share of contractors (percent of contractors that are small and subclass businesses); and

- Procurement rate (percent of obligations going to small and subclass businesses).

These measures were benchmarked against all-industry averages or (where they exist) goals to determine whether they were relatively high, relatively low, or about average.

To assess the high concentration of procurement dollars to large businesses in some industries, a measure to reflect that concentration was developed. The “revenue ratio” was defined as the ratio of average large-business procurement revenue to average small-business procurement revenue in the industry. This measure reflects both the size of contracts and the degree of concentration of contracts (or task orders) to individual large and small businesses.

The size/socioeconomic composition of contractors, size/socioeconomic composition of available businesses, and the distribution of obligations going to each class of contractor were first analyzed by industry. The analysis began at the sector (two-digit) level and went down to the four-digit—and in some cases six-digit—level of industry detail for small businesses as a whole and to the three-digit level of detail for socioeconomic subclasses. Subsequent analysis focused on the 113 six-digit industries with over \$500 million in procurement.

I. INTRODUCTION

The National Defense Authorization Act for Fiscal Year 2013 (NDAA) included the most recent modifications of the Small Business Act's goals for federal procurement. The NDAA:

- Restated annual percentage goals for participation in prime contract and subcontract awards by small businesses and subclasses of small business;
- Reiterated a standard for agency goals of “maximum practicable opportunity”;
- Provided direction for implementing agency goals, including “a consistent effort to annually expand participation by small business concerns from each industry category”; and
- Directed the SBA to review and revise its Goaling Guidelines to be more realistic and comprehensive.

The continued failure to achieve small-business procurement goals remains a frustration and a challenge. To monitor progress, the NDAA ordered an “independent assessment of the small business procurement goals,” including:

- Description of the industry composition of:
 - ◆ Companies receiving federal prime contracts and subcontracts,
 - ◆ Domestic small-business concerns and small-business subclass concerns, and
 - ◆ Contractors and small-business concerns in relative terms;
- The process of establishing procurement goals;
- The quality and availability of data on prime contracting and subcontracting; and
- Barriers within procurement practices that inhibit maximum practicable utilization of small-business concerns and small-business subclass concerns.²

This study was conducted in response to that directive. The report is organized into the following chapters:

- Chapter II assesses the process of setting procurement goals (goaling), its history, issues, and recent developments.

² Public Law 112–239 § 1631(a)(1), § 1631(b) - (d).

- Chapter III examines the industry composition of federal procurement, prime contractors by size and small-business subclass. The analytical approach is outlined, data sources are discussed, and findings are reported at the sector level and for a cross-sector analysis of industries with over \$500 million in procurement.
- Chapter IV provides a brief discussion of subcontracting—brief because of very limited data.
- Chapter V examines barriers within federal procurement practices.

Detailed analysis, data, and supporting information are provided in appendices. A glossary is included for some terms that have specific meanings in this report, as well as some more-standard terminology.

II. PROCUREMENT GOALS

Highlights

The process of translating a national small-business procurement goal into operational agency goals is complicated by several factors:

- Procurement goals are defined in both conceptual terms (“maximum practicable opportunity”) and quantitative terms (23 percent), and the two definitions often do not coincide.
- Small-business procurement rates (and opportunities) vary greatly across industries, and most industry rates are far above or below the national goal.
- Small-business procurement rates are functionally related to size standards; changes in size standards can affect “achievement” of goals without any underlying change in procurement.
- The government-wide small-business procurement goal was set and raised without apparent consideration of these complexities.

Although it is very low, the small-business procurement rate for procurement excluded from goaling computations is higher than the rates in more than one quarter of industries with procurement of over \$1 billion.

SBA has developed an innovative methodology for estimating agency procurement goals based on breaking down agency procurement by industry, which addresses key issues.

A. Origins of Goaling

The concept of goals for small-business procurement is found—in qualitative form—in the original Small Business Act of 1953. One of its stated objectives was to insure that a fair proportion of the total purchases and contracts for property and services for the Government . . . be placed with small-business enterprises.³

³ Public Law 83-163 (The Small Business Act of 1953), § 202(a).

A vision of “fair proportion” comes easily; quantification is far more difficult. It was another quarter century before Congress authorized (but did not set) explicit goals:

The head of each Federal agency shall, after consultation with the Administration, establish goals for the participation by small business concerns, and by small business concerns owned and controlled by socially and economically disadvantaged individuals, in procurement contracts.⁴

A decade later, Congress began to quantify goals because the desired results were not materializing. Congress found that “the Administration and some program participants have given insufficient attention and support to the business development goals” and that small business procurement was lagging. In 1988, Congress began requiring that “the President shall annually establish Government-wide goals for procurement contracts” at specified minimum percentages of procurement.⁵ Specific procurement goals for small businesses and subclasses were set over a dozen years:

- The government-wide goal for small business procurement was set at not less than 20 percent of the total value of all prime contract awards in 1988 and raised to not less than 23 percent in 1997.⁶
- A government-wide goal of not less than 5 percent of the total value of all prime contract and subcontract awards for small business concerns owned and controlled by socially and economically disadvantaged individuals (SDBs)⁷ was set in 1988.⁸
- A government-wide goal of not less than 5 percent of the total value of all prime contract and subcontract awards for concerns owned and controlled by women (WOSB) was added in 1994.⁹
- A government-wide goal of not less than 3 percent of the total value of all prime contract awards for HUBZone small-business concerns was set in 1997 as part of the

⁴ Public Law 95-507 (Amendments to the Small Business investment Act of 1978), § 221.

⁵ Public Law 100-656 (Business Opportunity Development Reform Act of 1988), § 101(a)(6).

⁶ Public Law 100-656, § 502 and Public Law 105-135 (Small Business Reauthorization Act of 1997), § 603(b)(1)(B).

⁷ The wording and precise definition have evolved over time, eventually becoming “small disadvantaged business” (SDB). The same definition applies both to participants in the 8(a) program and to SDBs as a broader procurement class, although the 8(a) program has requirements beyond this definition.

⁸ Public Law 100-656, § 101(a)(6).

⁹ Public Law 103-355 (Federal Acquisition Streamlining Act of 1994), § 7106(a).

establishment of the HUBZone¹⁰ Program. This goal was phased in, with an initial goal of 1 percent (effective in 1999) that rose by half a percentage point each year to its final level in 2003.¹¹

- A government-wide goal of not less than 3 percent of the total value of all prime contract and subcontract awards for small-business concerns owned and controlled by service-disabled veterans (SDVOSB)¹² was added in 1999.¹³

Along with goals, Congress included assorted programs and tools to expand such procurement, including:

- The 8(a) development program and its unique procurement provisions, which was part of the Small Business Act of 1953 and was designated by Congress as a development program for SDBs in 1978;¹⁴
- A small business threshold (which has repeatedly been raised) with restricted competition and simplified procurement procedures, including the “rule of two”;¹⁵
- Set-aside programs, generally subject to the “rule of two,” which used limited competition, sole sourcing, and/or procurement price preferences for:
 - ◆ Qualifying HUBZone businesses,¹⁶
 - ◆ Woman-Owned Small Businesses (WOSBs),¹⁷ and
 - ◆ Service Disabled Veteran-Owned Small Businesses (SDVOSBs);¹⁸ and

¹⁰ “Historically Underutilized Business Zone,” which is an area of relatively low income and high unemployment.

¹¹ Public Law 105-135 (Small Business Reauthorization Act of 1997), § 603(b)(1). The goal has since been modified to include subcontract awards as well as prime contract awards. See: Public Law 112-239, § 1631(a)(1)(A)(iii).

¹² Service-Disabled Veteran-Owned Small Business (SDVOSB) is the more complete term, but even this is shorthand for businesses owned by veterans with service-connected disabilities.

¹³ Public Law 106-50, (Veterans Entrepreneurship and Small Business Development Act of 1999), § 502.

¹⁴ Public Law 95-507, § 201.

¹⁵ “Each contract for the procurement of goods and services which has an anticipated value of less than \$10,000 and which is subject to small purchase procedures shall be reserved exclusively for small business concerns unless the contracting officer is unable to obtain offers from two or more small business concerns that are competitive with market prices and in terms of quality and delivery of the goods or services being purchased.” (Public Law 95-507, Section 221(j))

¹⁶ Public Law 105-135, Title VI. .

¹⁷ Public Law 106-554 (Small Business Reauthorization Act of 2000), § 811. The program was restricted to industries in which WOSBs were “underrepresented.” See also Reardon, Nicosia, and Moore (2007).

¹⁸ Public Law 108-183, Veterans Benefits Act of 2003.

- Subcontract plan requirements, which started as a stipulation that contractors agree “to awarding of subcontracts to the fullest extent consistent with the efficient performance of this contract”¹⁹ and which are still being expanded and strengthened.²⁰

Congress provided general direction. The quantitative goals were set at round numbers, with no apparent reference to such factors as size standards (which were in flux) or statutory provisions that might exclude small businesses from specific procurement markets. Statutory provisions about goals and programs to help achieve them include qualifying language such as “Goals [for an agency] . . . shall realistically reflect the potential of small business concerns . . . to perform such contracts and to perform subcontracts under such contracts” and “to the extent practicable.”

B. Conceptual and Practical Considerations

A Conceptual Dichotomy. The statutory mandate for goals consists of two quite separate types of requirements.

- Conceptually, the goal is “maximum practicable opportunity.”
- Quantitatively, a number is set—both government-wide (23 percent) and for each agency.

These two types of requirements are not always compatible. If the “maximum practicable opportunity” is considerably less than 23 percent in some agencies, meeting the government-wide goal requires that maximum practicable opportunity exceeds 23 percent in other agencies. Balancing agency goals is a necessary and complex aspect of meeting the government-wide goal.

Incentives. Goals are necessary to make a small-business procurement program operational and to track its progress. While goals provide an incentive, setting them is fraught with potential for demotivation. If a goal is set too high, it may be demoralizing and/or become ignored. High goals may also encourage shortcuts and definitional or accounting changes to raise measures of goal achievement. If it is set too low, a goal tends to lose its incentive value, and the floor it represents can become a ceiling. There can also be perverse feedback effects. If the reward for working hard to achieve a goal is consistently to have the goal increased, incentives to improve can be undermined. In these effects, perception about “high” may be as important as reality.

¹⁹ Public Law 95-507, § 221.

²⁰ Public Law 112-239, § 1613(a).

Government-wide and Agency Goals. A government-wide goal is an average. It is tempting to think of small-business procurement rates among agencies or industries as being normally distributed, with most being close to the average. This is not the case. Small-business procurement rates vary by more than an order of magnitude among important industries and agencies,²¹ and at the extremes the government-wide rate becomes almost irrelevant. There are very few rates near the average government-wide goal. There are, for example, no agencies with small-business procurement rates between 23 percent and 25 percent, and there are only a handful of industries in this range.²² This large variance in opportunities among agencies has two significant implications:

- Devising a set of agency goals that average out to the government-wide goal is a difficult task; obtaining agency consensus may be yet more difficult.
- An increase in the government-wide goal from 23 to 25 percent would directly affect almost nobody, as most procurement rates are below 23 percent or above 25 percent.

Goals and Discriminatory Quotas. Goals—at least for WOSBs and SDBs (including 8(a) businesses)²³—are further complicated by a history of court decisions prohibiting quotas related to racial and gender discrimination and attempts to correct it. Goals are non-binding to begin with, but the courts have parsed this characteristic more finely. In order to emphasize that goals are not discriminatory quotas, the courts have ruled that they may only be “aspirational.”²⁴ Program tools are allowed to correct demonstrable historical disparities. Thus, for example, The

²¹ Among the dozen agencies with the most procurement, the small-business procurement rate ranges from 5.1 percent (Department of Energy) to 55.8 percent (Department of the Interior). Among the 13 six-digit industries with the highest procurement, the range is 0.1 percent (Guided Missile and Space Vehicle Manufacturing [336414]) to 47.6 percent (Other Computer Related Services [541519]).

²² This includes one two-digit industry, two three-digit industries, and five four-digit industries. Among the 13 six-digit industries with the most procurement, only one—Management, Scientific, and Technical Consulting Services—(541611) is in this range.

²³ Veteran status as a basis for set-asides has not been questioned, and the HUBZone Program is a geographically based employment and anti-poverty program with no discriminatory overtones or history.

²⁴ (“Congress has established an “aspirational goal” for procurement from socially and economically disadvantaged individuals. . . . None of the goals established by Congress... are rigid numerical quotas, and there is no penalty for failure to meet the goals.”) Quotas for the percentage of contract or subcontract dollars awarded to certain types of small businesses would raise constitutional issues because firms’ status is based, in part, on race and gender. Race and gender are ‘suspect classifications,’ and the government would have to show that any challenged programs which classify individuals on these bases are narrowly tailored to further a compelling government interest, in the case of race-conscious programs; or are substantially related to important government objectives, in the case of gender-conscious programs.” See, e.g., *DynaLantic Corp. v. U.S. Dep’t of Defense*, No. 95-2301 (EGS), 2012 U.S. Dist. LEXIS 114807, at *9 (D.D.C., Aug. 15, 2012).

(Kate M. Manuel and Erika K. Lunder, *Set-Asides for Small Businesses: Legal Requirements and Issues*, Congressional Research Service Report for Congress R42981, February 28, 2013., p. 2.)

WOSB program, for example, was implemented only in industries where sufficient disparity had been shown.²⁵ Thus the judicial rulings are a constraint on achieving some socioeconomic procurement goals.

C. Agency Goals

The legislation that established agency goals stated both that “the head of each Federal agency shall, after consultation with the Administration, establish goals” and that “goals . . . shall be jointly established by the Administration and the head of each Federal agency.” The statute required each agency to “report to the Administration on the extent of participation by small business . . . in [its] procurement contracts,” adding that “such reports shall contain appropriate justifications for failure to meet the goals.” The SBA was then required to submit to Congress “information obtained from such reports, together with appropriate comments.”²⁶

These directives left responsibility for expanding procurement from small businesses and SDBs somewhat fragmented between the SBA and agencies. As noted above, the subsequent lack of progress led Congress to adopt explicit government-wide goals. These broad goals, however, left largely unanswered the questions of what the individual agency goals should be and how they should be balanced to achieve the government-wide goal. In practice, there is no benchmark for an agency goal other than past performance, which may be well below the government-wide goal. The ensuing process could be described as “negotiation.”

For a variety of reasons, agencies vary greatly in their capacity to achieve any given small-business procurement²⁷ goal. The complexities of goal-setting are repeated agency by agency and again at sub-agency levels. Congress has acknowledged these differences and complexities by directing that “each agency shall have an annual goal that presents, for that agency, the maximum practicable opportunity for small business concerns,”²⁸ and mandating an

²⁵ Elaine Reardon, Nancy Nicosia, and Nancy Y. Moore, *The Utilization of Women-Owned Small Businesses in Federal Contracting*, Prepared for the Small Business Administration, 2007.

²⁶ Public Law 95-507, § 221.

²⁷ “Small-business procurement” is used here as shorthand for the complete (but cumbersome) statutory language that includes “participation by small business concerns owned and controlled by service-disabled veterans, qualified HUBZone small business concerns, small business concerns owned and controlled by socially and economically disadvantaged individuals, and small business concerns owned and controlled by women.”

²⁸ Public Law 112-239 (National Defense Authorization Act for 2013), § 1613(a).

agency planning process.²⁹ This realistic approach all but backs away from the idea of quantitative government-wide goals—except that:

The Small Business Administration and the Administrator for Federal Procurement Policy shall . . . insure that the cumulative annual prime contract goals for all agencies meet or exceed the annual Government-wide prime contract goal.³⁰

The principal means of accountability to Congress has been reporting, and the SBA has had the responsibility for creating and/or forwarding the reports. Two quantitative summary reports provide an overview, as well as food for thought and data for discussion of future goals:

- A goaling report provides achievement results for each of 95 individual agencies,³¹ and
- The Small Business Performance Scorecard gives a letter grade for the performance of each major agency, based on a weighted average of a number of factors.³²

²⁹ “After establishing goals under this paragraph for a fiscal year, the head of each Federal agency shall develop a plan for achieving such goals at both the prime contract and the subcontract level, which shall apportion responsibilities among the agency’s acquisition executives and officials. In establishing goals under this paragraph, the head of each Federal agency shall make a consistent effort to annually expand participation by small business concerns from each industry category in procurement contracts and subcontracts of such agency.” (Public Law 112-239, § 1613(b)).

³⁰ Public Law 112-239, § 1613(a).

³¹ This report includes:

- Total small business “eligible” dollars and actions and
- Dollars and actions – both nominal and percent – of small business and six small business sub-classes.

³² The Scorecard includes:

- A weighted average of achievement of prime contracting goals as a percent of the agency goal. The actual agency goal for small business is used; government-wide goals for the subclasses. Percentages can exceed 100 percent. Small business is given 60 percent of the weight; the four goaled subclasses 10 percent each.
- A weighted average of percentages of achievement of subcontracting goals, using the same weights as prime contracting.
- Seven “success factors”—each graded on a scale of 0.0 to 1.0.
 - ◆ The Agency demonstrated, through action and documented evidence, a commitment to utilize small businesses to obtain goods and services.
 - ◆ The agency’s senior leadership (e.g., senior procurement executive, senior program managers, and OSDDBU director) demonstrated, through action and documented evidence, that they have clearly communicated the importance of achieving the agency’s Small Business contracting goals through the chain of command to the contracting officer level.
 - ◆ The Agency demonstrated, through action and documented evidence, a commitment to small business contracting data quality.
 - ◆ The Agency demonstrated a commitment to small business utilization through regular training of acquisitions staff on the issues/procedures/policies/regulations impacting small businesses.
 - ◆ The Agency demonstrated, through action and documented evidence, a commitment to growing their small business supplier base and increasing awareness of contracting opportunities for small businesses.
 - ◆ The Agency demonstrated, through action and documented evidence, a commitment to expanding subcontracting opportunities for small businesses.
 - ◆ The Agency demonstrated, through action and documented evidence, efforts to unbundle contracts? If the Agency bundled contracts, has it documented and published their rationale.

The Scorecards are designed to provide a single summary grade on performance, but the “success factors,” which are a relatively recent addition, go behind performance numbers. They describe practices in a way that could be cited by reference as recommendations. The success factors represent potential for concise information that would be far more useful than the numerical scores to which they are reduced on the Scorecards.

D. Developments in Setting Agency Goals Since 2003

A decade ago, SBA’s published goaling guidelines³³ described a process in which agencies developed their goals and submitted them (with justification) to the SBA for approval. If the SBA did not approve, negotiations would ensue, with appeal to OMB’s Office of Federal Procurement Policy a possible outcome in case of disagreement. SBA guidelines noted that “no individual goals will be accepted until the cumulative goals reach the statutory government-wide minimum.” Until this was accomplished, interim goals were to be set at the government-wide goal or a three-year average of each agency’s achievement. For an agency charged with insuring that the government-wide goal is met—the SBA—this is rather weak leverage.

Subsequent to the 2003 guidelines, there was very little upward trend in small-business procurement, except for SDVOSBs (see Table 1), and only SDB procurement consistently

**Table 1:
Government-Wide Procurement Achievement—Percentages of Prime Contract Dollars**

Year	All Small	SDBs	8(a)	VOSBs	SDVOSBs	WOSB	HUBZone
FY2011	21.7%	7.7%	4.0%	4.4%	2.7%	4.0%	2.4%
FY2010	22.7%	7.9%	4.3%	4.3%	2.5%	4.0%	2.8%
FY2009	21.8%	7.6%	4.2%	3.7%	2.0%	3.7%	2.8%
FY2008	20.5%	6.3%	3.4%	3.0%	1.4%	3.2%	2.2%
FY2007	22.0%	6.6%	2.7%	2.9%	1.0%	3.4%	2.2%
FY2006	22.8%	6.8%	3.7%	2.6%	0.9%	3.4%	2.1%
FY2005	23.4%	6.6%	3.7%	2.2%	0.6%	3.2%	1.9%
Goal	23.0%	5.0%	NA	NA	3.0%	3.0%	3.0%

Source: Federal Procurement Data System – Next Generation

- A letter grade, based on the composite numerical score, in which prime contracting is given an 80 percent weight and the other two factors are given weights of 10 percent each.

³³ Small Business Administration, Office of Government Contracting, *Goaling Guidelines for the Small Business Preference Programs for Prime and Subcontract Federal Procurement Goals & Achievements*, July 3, 2003, p. 6.

exceeded the government-wide goal. As Congress directed,³⁴ the SBA went back to the drawing board on goaling guidelines and came up with a substantially more proactive methodology³⁵ for making its own estimates of what agency goals should be.

The fundamental problem in setting agency goals is that procurement patterns vary so much from agency to agency. Agencies are really not directly comparable, and using government-wide procurement goals as benchmarks is not very helpful under these circumstances. The key insight of the methodology is that procurement from a given industry by various agencies is far more comparable than overall procurement. Thus the methodology starts by breaking an agency's small-business procurement rate down into a set of industry procurement rates and computing the government-wide small-business procurement rate for that industry as the benchmark.³⁶

An agency Base Rate (measured in percentage points) is defined as the government-wide benchmark rate minus the agency's industry procurement rate (if the agency's procurement rate is less than the benchmark) or the government-wide benchmark (if it is less than the agency's procurement rate). The industry procurement rate of each agency office is then compared with the agency Base Rate, and an opportunity for growth in small-business procurement is estimated for the office on the basis of this comparison.³⁷

The "opportunity" (in percentage points) is then added to the actual office procurement rate, and the sum is multiplied by the actual office/industry procurement to convert the opportunity into dollars. This process is repeated by industry for each office, and the dollar amounts are added across offices and industries to produce an agency total of "opportunity" (i.e., historic achievement plus opportunity for growth) of procurement from small business. When divided by total historical procurement, this becomes the estimate of the new agency goal.

The process is complex, the estimates of the size of the "opportunity" are rather rough, and various parameters could be debated, but the methodology includes a number of well-designed features that address significant issues:

³⁴ Public Law 112-239, § 1613(c).

³⁵ Small Business Administration, *Office of Government Contracting, FY14 Small Business Goal Setting Methodology*.

³⁶ A more complete exposition of the methodology is contained in Appendix A.

³⁷ The algorithm used is:

- If the office rate is half the Base Rate or less, the "opportunity" is half the Base Rate.
- If the office rate is half to three quarters the Base Rate, the "opportunity" is one quarter of the Base Rate.
- If the office rate is higher, no opportunity is deemed to exist.

- Defining differences in terms of industry—not overall—procurement gets at one of the most important factors in differences in agency procurement rates.
- By comparing agency performance in an industry to government-wide performance and using the difference as a benchmark for adjusting office goals, the methodology produces a new estimate that is reasonably specific to each agency.
- The methodology recognizes that gaps cannot be closed in one year and strikes a reasonable compromise between accepting historical performance and insisting on the government-wide goal.
- The methodology strikes a balance between finding opportunity where achievement is low and finding more opportunity where achievement is already relatively high.
- Any adjustment in agency goals needed to meet the government-wide goals (and some was needed) is spread equitably among industries and agencies—and the adjustment can be estimated in advance, rather than waiting for all the agency-proposed goals to be submitted.
- Even if it doesn't get the "opportunity" (or the timing of adjustment) quite right, the methodology points to where and how improvements can be made.
- The methodology gives SBA an independent, reasonable, fact-based position from which to negotiate with agencies.

E. Exclusions

Goals and the goaling program have been defined by the SBA in terms of "eligible" dollars. "Eligible" is shorthand for saying that not all procurement is included in the base (or achievements) used to calculate small-business procurement rates; some procurement is excluded.³⁸ A complete list of FY2012 exclusions is in Appendix B. The fundamental logic for

³⁸ "There are several categories of procurement not included in the base because they are not covered by the goaling program. Examples include:

- Non-appropriated Funds. Procurements with funds generated from operations such as user fees, gifts, etc., rather than appropriated funds. Examples include the U.S. Postal Service and Comptroller of the Currency.
- Internal Transactions. Some transactions are internal to an agency and are not actually contracts, such as when a military base orders supplies from the Defense Department's Supply Depot. The acquisitions of the supply depot are also not included in the goaling program because they are funded with proceeds from resales within the Department.
- Mandatory Sources. By law, agencies must award certain contracts to "mandatory sources." Examples include commodities produced by the Federal Prison Industries (known as UNICOR) or the JWOD Participating Nonprofit Agency (formerly Sheltered Workshop).

exclusion is that, if small businesses cannot obtain certain types of contracts, that procurement should not be part of the baseline used to compute the percentage of contract dollars awarded to small businesses. In practice, exclusion has been based on a number of specific (and sometimes overlapping) factors—some statutory and others practical.

- Procurement from small businesses may be prohibited by statute. Mandatory sourcing is the principal example.
- Small businesses have restricted access to some markets. Examples include:
 - ◆ Exemptions from competition under the Competition in Contracting Act (CICA),³⁹
 - ◆ Overseas procurement, and
 - ◆ Internal transactions.
- Procurement using non-appropriated funds (e.g., user fees) is different from procurement based on budget appropriations.
- Some procurement is not subject to the tools of small-business programs, including:
 - ◆ Agencies with statutory exemptions from the FAR⁴⁰ and
 - ◆ Agencies exempted from the definition of “agency” used in the Small Business Act.⁴¹
- Data availability is another factor. A number of agencies do not report in the FPDS,⁴² which is the source of data for goaling. This list includes some of the agencies

• Contracts for Foreign Governments or International Organizations. Examples include Foreign Military Sales that are Government-to-Government transactions often funded by foreign-country funds. Contracts Not Under FAR. As a matter of policy, goals only extend to procurements subject to the Federal Acquisition Regulations (FAR). Therefore, agencies with special exemptions from the FAR, such as the Federal Aviation Administration (FAA) or the Transportation Security Administration (TSA), are not covered by the goaling program.” (SBA, OGC, *Goaling Guidelines*, p. 3.)

³⁹ “An executive agency may use procedures other than competitive procedures . . . when . . .

(4) the terms of an international agreement or treaty between the Federal Government and a foreign government or an international organization, or the written directions of a foreign government reimbursing the executive agency for the cost of the procurement of the property or services for that government, have the effect of requiring the use of procedures other than competitive procedures;

(5) subject to section 3105 of this title, a statute expressly authorizes or requires that the procurement be made through another executive agency or from a specified source, or the agency’s need is for a brand-name commercial item for authorized resale.”

(41 U.S.C. § 3304(a))

⁴⁰ Goaling program regulations—planning, setting, and meeting goals, reporting, etc.—are found in Part 19 of FAR.

⁴¹ The term “agency,” as used in the Small Business Act, does not include some governmental units such as the United States Postal Service or the Government Accountability Office. (15 U.S.C. § 632(b))

⁴² These agencies include:

- Architect of the Capitol,

nominally excluded because they are exempt from the FAR or the Small Business Act. Some agencies that are not required to report data, however, do so anyway.

The rationale of excluding contracts that small businesses have little or no chance of winning is plausible. In some respects it is almost a logical implication of “an annual goal that presents . . . the maximum practicable opportunity for small business concerns.” Setting the goal probably did not factor in situations where small businesses would effectively be excluded, and so some sort of adjustment seems to be in order.

There are, however, problems with exclusions. One is that exclusions are a slippery slope. If statutorily directed purchases are excluded because small businesses may not be awarded these contracts, why not exclude industries where small businesses do not actually win contracts? HMO Medical Centers (621491) is such an industry, in which small businesses win no contracts, probably because—in order to provide full services and pool risk—an HMO must be larger than any reasonable size standard. Yet if the size necessary to pool risk is an issue, why not exclude Investment Banking and Securities Dealing (523110)—with its small-business procurement rate of 0.2 percent—or Direct Health and Medical Insurance Carriers (524114), with its rate of 0.4 percent. Since this latter industry has \$11.3 billion in procurement (2.2 percent of all procurement), it is fairly clear that such reasoning leads to the evisceration of procurement goals.

A second point is that Congress was rather unequivocal in its requirement of “not less than 20 [now 23] percent of the *total value* of all prime contract awards for each fiscal year” [emphasis added]. The intent has recently been clarified by explicitly prohibiting some categories of exclusion, including specific types of goods and services, source of funding, and

-
- Congressional Budget Office,
 - Supreme Court of US,
 - US Courts of Appeals–Judicial Circuits,
 - US District and Territorial Courts,
 - Bankruptcy Courts,
 - Administrative Office of the US Courts,
 - Federal Judicial Center,
 - Postal Service,
 - Federal Deposit Insurance Corporation,
 - Central Intelligence Agency, and
 - Tennessee Valley Authority.

agency exemption from the FAR.⁴³ Although Congress did not specifically address this, the SBA Inspector General had recommended including contracts awarded and/or performed overseas in the small-business goaling computations.⁴⁴

Exclusions make a difference in reported goal results. Comparison of FY2012 goaling reports and FY2012 FPDS data indicate that the difference is about three percentage points.

- The goaling report shows a small-business procurement rate of 22.2 percent.⁴⁵
- FPDS data show a small-business procurement rate of 19.2 percent.⁴⁶
- The small-business procurement rate for “non-eligible” procurement, which is reported in FPDS but excluded from the goaling report, is 7.3 percent.⁴⁷

These results are broadly consistent with calculations cited by Congress in 2007, which indicated that inclusion of foreign contract opportunities would lower the small-business procurement rate to 19.3 percent.⁴⁸

Excluding small-business procurement of \$7.7 billion is a substantial omission, and 7.3 percent is higher than the small-business procurement rate in 19 of the 70 industries with procurement over \$1 billion. The finding of substantial small-business procurement in “non-eligible” areas supports eliminating exclusions as far as possible simply to get a more accurate and complete picture of small-business procurement. Eliminating exclusions from the data will lower the measured small-business procurement rate and may not contribute much to small-business procurement. It is a valid point, however, that the leverage for expanding small-business

⁴³ “The Administrator of the Small Business Administration shall . . . revise the Goaling Guidelines for the Small Business Preference Programs for Prime and Subcontract Federal Procurement Goals and Achievements to the extent necessary to ensure that . . .

(2) agency contracting and subcontracting goals are established in a manner that does not exclude categories of contracts on the basis of—

(A) the type of goods or services for which the agency contracts;

(B) in the case of contracts subject to competitive procedures under chapter 33 of title 41, United States Code—

(i) whether or not funding for the contracts is made directly available to the agency by an

Appropriations Act or is made available by reimbursement from another agency or account; or

(ii) whether or not the contract is subject to the Federal Acquisition Regulation.”

(Public Law 112-239, § 1613(c))

⁴⁴ Small Business Administration, Office of Inspector General, *Small Business Administration's Rationale for Excluding Certain Types of Contracts from the Annual Small Business Procurement Calculations Needs to be Documented*, Advisory Memorandum, Report No. 12-04, December 6, 2011.

⁴⁵ \$89.9 billion in eligible small-business procurement as a percent of an eligible base of \$404.2 billion.

⁴⁶ \$97.6 billion in total small-business procurement as a percent of a total base of \$508.9 billion.

⁴⁷ \$7.7 billion in non-eligible small-business procurement as a percent of a non-eligible base of \$104.7 billion.

⁴⁸ House of Representatives Report No. 110-111, Part 1 (2007).

procurement in agencies not subject to the FAR may be rather weak. It is not reasonable to expect high small-business procurement rates under such circumstances.

SBA is now moving toward implementing Congress's latest directives and reducing exclusions. FY2012 accomplishments have been recalculated.⁴⁹

F. Goaling and Small Business Size Standards

Small-business procurement goals and the size standards that define "small" have an intimate mathematical relationship. If a size standard is raised, more businesses will be defined as "small," the "maximum practicable opportunity" for "small business" participation in procurement will correspondingly expand, more procurement will be counted as "small," and a higher small-business procurement rate will result. Channeling procurement to businesses that were not previously considered small, however, is not the same thing as expanding procurement from businesses that *were* previously considered small. Raising size standards has the effect of lowering the procurement goal so that current small-business procurement can meet it rather than expanding small-business procurement to meet the current goal. It is possible, for example, to meet the 23-percent government-wide goal for FY2012 by suitable retroactive increases in the size standards.

G. Observations

Procurement goals are complex, and they entail dualities and paradoxes. A quantitative goal is only coincidentally the same thing as maximum practicable opportunity. To this extent, a quantitative goal is arbitrary. A government-wide goal may be wildly inapplicable to a particular industry or agency. Goals provide incentive, but goals that are set too high⁵⁰ can be counterproductive. On the other hand, a goal that has been achieved ceases to serve as an incentive. In a sense, the major issue is not that goals have not been achieved but that

⁴⁹ The following exclusions were dropped from the FY2012 list of exclusions:

- Office of the Comptroller of the Currency,
- Office of Thrift Supervision,
- Bureau of Engraving and Printing,
- Overseas Private Investment Corporation,
- Court Services and Offender Supervision Agency, and
- Product Service codes for Leases in the format X***.

⁵⁰ An example was the proposal that the government-wide goal be raised to 30 percent and that "each agency shall have an annual goal, not lower than the Government-wide goal." (H.R. 1873.IH (110th Congress), §201 and §204)

achievement has plateaued short of the goal—and that observable opportunities continue to be untapped.

The opportunity for small-business procurement varies greatly among industries and agencies, and the differences in opportunity can be difficult to calibrate. Low small-business procurement rates alone do not distinguish between a lack of opportunity and a failure to realize potential. In practice, an adjustment is made by using historical performance in setting new goals, but that procedure really begs the question. Discernment of opportunities is needed to understand whether to push for higher achievement or to accept differences in achievement due to underlying factors. Discernment requires a deeper understanding of agencies' procurement patterns than goaling data provide.⁵¹

Small-business procurement probably would best be served by an approach that looks at the total value of all prime contract awards (no exclusions), adequately understands and considers inherent differences, and refrains from tinkering with size standards unless changes were required to meet market conditions. Such an approach would improve the focus on actual increases in small-business procurement.

H. Recommendations

Goal-Setting Methodology

The SBA has responded to Congress's prodding by developing a creative methodology for apportioning agency goals that addresses important issues. Among other benefits, this methodology gives SBA an independent, reasonable, fact-based position from which to negotiate with agencies.

This methodology should be used for at least several years without outside intervention, and then a review should be conducted.

⁵¹ The Department of Energy is a good example of both real differences in opportunity and cosmetic differences in procurement rates. A great deal of DoE activity is carried out in large-scale national laboratories under management and operating (M&O) contracts. These contracts absorb a high proportion of prime contract dollars. DoE has the lowest procurement rate of any major agency (5.15 percent in FY 2012). Because of the unique character of national labs and the extent to which they overlap government functions, the Office of Federal Procurement Policy determined in 1991 that the M&O contractors' contracts should be considered prime contracts for goaling purposes—and then reversed the determination in 1999—causing substantial changes in the small-business procurement rate with no real underlying difference. The fact that DoE has a major institutional handicap, however, should not deter efforts at improvement.

(U.S. Small Business Administration Office of Advocacy and U.S. Department of Energy, National Nuclear Security Administration, *Encouraging new Opportunities for Small Business as Prime Contractors Through Changes to DOE's Management and Operating and Other Management Contracts*, June 2006, pp. 11–14, 35–36.)

Resetting the Government-Wide Goal

A procurement goal serves a necessary function. The government-wide goal of 23 percent is somewhat arbitrary. Small-business procurement rates vary so widely among industries and agencies that the government-wide goal is essentially irrelevant to many of them. An increase of two percentage points would directly affect very few industries and no agencies; it would simply put all agencies that are not achieving the current goal two more percentage points below the goal. In some instances, raising a goal that was already out of reach could have a counterproductive effects on incentives.

An increase in the government-wide goal should not be considered until the current goal has been achieved more than once.

Exclusions

Although a rationale for excluding some procurement exists, exclusions have been a contentious distraction, and the rationale may actually be counterproductive by obscuring the fact that some major industries have lower small-business procurement rates than excluded procurement as a whole. Exclusion is inevitable, however, when data are not available.

The practice of exclusion should be discontinued as completely as possible. If Congress wants complete inclusion, missing agencies need to be included in FPDS data.

SBA Scorecards

The Scorecards' "success factors" address procurement practices that are often emphasized in general but for which information on specific details is often not available. The Scorecards' information potential is far from realized.

The SBA should supplement the numerical scores with descriptive details—e.g., how "commitment" is "demonstrated"—and use the findings for evaluation, negotiation leverage in setting agency goals, and examples of best practices.

III. DIRECT PROCUREMENT

Highlights

Small-business procurement levels vary greatly among industries, and small-business procurement is concentrated at all industry levels.

- At the sector (two-digit NAICS) level, 66.5 percent of all federal procurement is from two sectors.
- At the six-digit level, 53.6 percent of all procurement is from 13 industries.

Small-business procurement rates vary greatly among industries, even at the sector level.

- Of the four sectors with the highest levels of procurement:
 - ◆ Construction (23) has a small-business procurement rate twice the national goal.
 - ◆ Manufacturing (31-33) has a procurement rate of half the national goal.
- Of the subsectors within Manufacturing:
 - ◆ Five have small-business procurement rates more than twice the national goal.
 - ◆ Two have procurement rates about one quarter of the national goal.
- It is not the norm for the six-digit industries within a four-digit industry to have similar small-business procurement rates. Frequently a four-digit industry rate:
 - ◆ Is a balance among widely divergent six-digit rates or
 - ◆ Is determined largely by the rate of a dominant six-digit industry.

Procurement rates of small-business subclasses tend to reflect large variations in small-business procurement rates, but neither this relationship nor any relationship among subclass rates across industries is very consistent.

Small-business procurement rates tend to be relatively high in industries with relatively little procurement and relatively low in industries with relatively high procurement.

Differences in availability or participation of small businesses in contracting clearly influence small-business procurement rates in individual industries; availability and participation overlap too much and vary too little to explain the large differences in small-

business participation rates across industries. Small-business shares of contractors are frequently at or near average in industries with very low small-business procurement rates.

Extremely low small-business procurement rates (5 percent or less) in individual industries with very high procurement levels are the principal cause of failure to achieve the government-wide small-business procurement goals.

These critical industries are characterized by high concentrations of procurement dollars in a relatively small number of large businesses.

A. Analytical Approach

1. Data

Data Sources. The Federal Procurement Data System–Next Generation (FPDS–NG) provides data on federal prime contracts and contractors. We used data for FY 2012 (the latest complete year available when the study began).⁵² Each FPDS record contains the following variables:

- The six-digit NAICS (industry) code assigned to the contract;
- The DUNS number of each contractor;
- Total obligations (in dollars); and
- The small-business⁵³ or subclass (socioeconomic) status of the contractor.⁵⁴

The System for Award Management (SAM)⁵⁵ provides counts of businesses registered as potential federal contractors. We used SAM registration as the measure of domestic businesses available for Federal contracting. We collected counts of registrants of each type—total, small-business,⁵⁶ and subclass—for each industry.

⁵² Data were collected in October and November, 2013. The study used data for all procurement in FPDS–NG, rather than data on procurement “eligible” for small businesses that SBA uses for goaling analysis. This is consistent with the requirements of P.L. 112–239. Moreover, the certified goaling data did not become available until December 2013. As a result, small-business percentages of procurement reported here are smaller than the corresponding percentages in the goaling report. It should be noted, however, that not all agencies report data to FPDS–NG, and this analysis (like the goaling analysis) excludes that procurement.

⁵³ “Small” or “Other Than Small,” as designated by the contracting officer.

⁵⁴ See Appendix D for definitions of each subclass.

⁵⁵ Formerly the CCR.

⁵⁶ Registrants that are large (shorthand for “other than small”) are computed as:
(Large Registrants) = (Total Registrants) – (Small Registrants)

Appendix C contains a more detailed discussion of these data sources (as well as some potential alternatives that were not used), issues we encountered while collecting and using data, and recommendations.

Data Transformation. Data for a single contract may be disaggregated by task order, record, and action.⁵⁷ Since we were principally interested in obligations and contractors in each industry, we performed several aggregations of the data:

- For each six-digit industry, records for each DUNS number were merged and obligations for each DUNS number were summed to obtain a unique record for each firm.
- Summary records were created, by class of business, for each industry by counting the DUNS numbers and summing the obligations for:
 - ◆ All records.
 - ◆ Small businesses and
 - ◆ Each small-business subclass.
- This process was then repeated at the four-digit, three-digit, and two-digit levels of industry detail.

Additional variables were derived, principally by calculating percentages or other ratios, to produce the following data for each industry at each level of industry detail:

- Data on procurement include:
 - ◆ Total dollars obligated and dollars obligated in contracts to:
 - Large businesses,
 - All small businesses, and
 - Each subclass of small business;
 - ◆ Dollars obligated to small businesses and each subclass of small businesses as percentages of total dollars obligated (the “procurement rate”); and
 - ◆ A measure of concentration of procurement (the “revenue ratio”).⁵⁸

⁵⁷ There may be multiple actions in a record, and there may be multiple records for a task order or contract.

⁵⁸ The “revenue ratio” is defined as the ratio of average procurement per large contractor to average procurement per small contractor. The revenue ratio provides information similar to average contract size for large and small contractors, but it picks up an additional nuance. High average procurement per large contractor reflects relatively large contracts to large contractors, but since a large number of large contractors would make the numerator fall, it also reflects concentration of procurement dollars on a relatively small number of large contractors.

- Data on the population of contractors include:
 - ◆ The total number of firms with contracts and the numbers of contractors that are:
 - Large businesses,
 - Small businesses, and
 - Members of each subclass of small business; and
 - ◆ Numbers of contractors that are small businesses and members of small-business subclass as percentages (the “share”) of the total number of firms with contracts;
- Data on the availability of, and participation by, firms in contracting include:
 - ◆ The numbers of SAM registrants in the industry that are:
 - Large businesses,
 - Small businesses, and
 - Members of each subclass of small business;
 - ◆ Percentages of SAM registrants that are small or subclass businesses (“SAM registration rate”), and
 - ◆ Measures of success of small and subclass businesses in winning contracts:
 - Participation rates⁵⁹ and
 - Participation ratios.⁶⁰

Double-Counting Issues. Although the number of small and subclass businesses is an important variable, there are problems of double-counting businesses with respect to both contract awards to subclasses and the number of businesses in an industry.

There is some overlap in subclass definitions. The most obvious is that an SDVOSB is also a VOSB.⁶¹ The more general problem is that business owners may be in more than one

⁵⁹ This is defined as the percent of small (or subclass) registrants in SAM that hold contracts.

⁶⁰ For small businesses, this is defined as:

(The percent of small SAM registrants that are contractors)
 (The percent of large SAM registrants that are contractors)

For subclasses the participation ratio is defined similarly, with large registrants in the denominator. The “participation ratio”—instead of percentages of SAM registrants that are contractors (participation rate)—is useful because:

- It shows small-business participation rates relative to large-business participation rates, and
- Systematic difference in data between FPDS and SAM sources tend to cancel out in this type of ratio.

⁶¹ Others examples include:

- SDBs are defined to include 8(a) businesses, and
- Joint ventures by 8(a) and HUBZone businesses are counted under both subclasses.

subclass. If they are, they will be counted in each subclass.⁶² There is no practical way to allocate contract dollars to subclasses that would avoid such double-counting.⁶³ One must simply live with the fact that data cannot be added across subclasses and interpret achievement of goals in light of that fact.

“How many businesses are in a given industry?” would seem to be a simple question, but it is not. Within any sector (two-digit NAICS industry), the number of unique contractors varies with the detail of the industry whenever businesses have contracts in more than one detailed industry. A business with contracts in two six-digit NAICS industries within a four-digit NAICS industry, for example, is legitimately counted twice at the six-digit level of detail. It would, however, be incorrect double-counting to count the contractor twice at the four-digit level of detail. Thus the count of unique contractors will be larger in more detailed industries than in more aggregated industries made up of those six-digit industries. Since large businesses are somewhat more likely to be in multiple industries than small businesses are, the percentage of businesses that are small will also tend to be smaller at more disaggregated industry levels.

Appendix E shows how the counts of businesses vary with the level of industry detail. The effect is most extreme in Manufacturing (31-33), where there are twice as many small businesses, and 2.5 times as many large businesses, at the six-digit industry level than at the two-digit level, and the small-business share of contractors changes by more than four percentage points.

FPDS data have a six-digit NAICS code and a DUNS number for every record. Thus it was possible to count unique DUNS numbers for each industry at the six-digit industry level and then regroup the records at the four-digit, three-digit, and two-digit industry levels and count the unique records at each industry level. This procedure avoided counting businesses more than once in the more aggregated NAICS industries. The FPDS data in the report reflect this adjustment.

SAM data were available only as counts of businesses at the six-digit NAICS level. These generally could be grouped into four-digit industries, but any further aggregation required adding up four-digit counts. That process counted a DUNS number in multiple four-digit industries more than once, which tends to bias upward the count at the more aggregated level.

⁶² To give an extreme hypothetical, a female service-disabled veteran with Vietnamese parents who has an 8(a) business located in a HUBZone would be counted in all six subclasses.

⁶³ FPDS data allow identifying specific combinations of subclasses, but there are (theoretically) 720 of them, which would hardly be a tractable analysis.

For this reason, we have not reported counts of SAM registrants at the two-digit or three-digit level except where only one four-digit industry is involved.⁶⁴

2. Assessment Issues

A central concern of this study is the extent to which low procurement rates for small and subclass business are associated with low numbers of small and subclass businesses in an industry or occur despite availability of such businesses. One issue is identifying the stage at which low participation occurs:

- Availability of small or subclass businesses—is the percent of SAM registrants low?
- Participation of small or subclass businesses in contracting—is the share of contractors low because the participation ratio (or rate) of SAM registrants is low?
- Relative size of contracts—are contracts awarded to small and subclass businesses enough smaller⁶⁵ to result in a low procurement rate despite a high small or subclass share of contractors?

Any assessment requires a working definition of what is meant by “low” or “small.” We have used averages across all industries as benchmarks:

- The benchmark for SAM registration is the average percent of SAM registrants in all industries that are small—about 75 percent— or in a subclass.⁶⁶
- Similarly, the benchmark for share of contractors is the all-industry average of contractors that are small—about 67 percent—or are in a subclass.
- The benchmark for participation ratio for small businesses is about 0.68. Separate benchmarks were not computed for subclasses.⁶⁷

⁶⁴ One reason for preferring participation ratios to participation rates is that both the numerator and the denominator contain a ratio of an FPDS number to a SAM number. Thus the distortions will cancel out to a considerable degree. If the pattern of changes in counts of large and small businesses found in FPDS data holds for SAM data, the more aggregated participation ratios are probably biased upward.

⁶⁵ Under most circumstances the small-business procurement rate will be lower than the small or subclass share of contractors because large businesses tend to get larger—or more—contracts than small or subclass businesses. As noted above, we used the revenue ratio instead of contract size, because it reflects both size and number of contracts.

⁶⁶ Benchmarks—all-industry averages—for the sub-classes are as follows:

Variable	SDB	8(a)	VOSB	SDVOSB	WOSB	HUBZone
Percent of Registration	27.2%	5.8%	15.1%	8.8%	19.6%	2.9%
Share of Contractors	10.6%	7.7%	9.7%	4.0%	14.5%	2.1%
Procurement Goal	5%	-	-	3%	5%	3%
Actual Procurement	6.7%	3.4%	4.1%	2.4%	3.4%	0.8%

Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

- The benchmark for procurement rate is:
 - ◆ The goaling level (where a goal exists) and/or
 - ◆ The actual all-industry average procurement rate for the subclass.

Industry small-business procurement rates can be anywhere from zero to 100 percent. For descriptive purposes, we use the following definitions—centered around the small-businesses goal of 23 percent—to describe ranges in which the small-business procurement rate may fall:

- “Very Low”—a rate below 10 percent (roughly half the goaling target); and
- “Low”—a rate from 10 percent to 20 percent;
- “Intermediate”—a small-business procurement rate between 20 percent and 25 percent (within two or three percentage points of the 23-percent goaling target);
- “High”—a rate between 25 percent and 50 percent;
- “Very High”—a rate over 50 percent (roughly twice the goaling target);

B. Results at the Sector Level

This section presents results on procurement from small and subclass businesses that are prime contractors at the sector level of detail. More detailed results and data are presented in appendices:

- Appendix F provides analysis of procurement, by sector, at:
 - ◆ The four-digit industry level for small business as a whole,
 - ◆ The three-digit industry level for all small-business subclasses,⁶⁸ and
 - ◆ The six-digit industry level for small business in selected industries that have very high levels of procurement and/or very low small-business procurement rates.
- Appendix G provides data on small-business procurement at the six-digit industry level of detail.⁶⁹

⁶⁷ This number is approximate because of issues related to aggregating SAM data to the two-digit or all-industry level, which are discussed below.

⁶⁸ Tables for subclass procurement at the three-digit industry level, which are somewhat briefer, include:

- Small-business data for reference,
- The subclass procurement rate,
- The subclass share of contractors, and
- The subclass participation ratio.

⁶⁹ Tables in Appendix G include:

- Other appendices provide data at the four-digit level for small-business subclasses:
 - ◆ Socially and economically disadvantaged small businesses (Appendix H),
 - ◆ 8(a) businesses (Appendix I),
 - ◆ Veteran-owned small businesses (Appendix J),
 - ◆ Service-disabled veteran-owned small businesses (Appendix K),
 - ◆ Woman-owned small businesses (Appendix L), and
 - ◆ HUBZone businesses (Appendix M).

1. Levels of Procurement, by Sector

The level of procurement varies among the 19 sectors (two-digit NAICS industries) by several orders of magnitude. This fact is important in understanding the overall rate of small-business procurement:

- Two sectors account for almost two thirds of all procurement:
 - ◆ Manufacturing (31-33)—38.8 percent—and
 - ◆ Professional, Scientific and Technical Services (54)—27.7 percent.
- Two other sectors account for more than an “average” sector level (5.2 percent) of procurement:
 - ◆ Administrative and Support, Waste Management and Remediation Services (56)—8.5 percent—and
 - ◆ Construction (23)—7.0 percent.
- Six other sectors account for between 1.0 percent and 5.0 percent of procurement each:
 - ◆ Wholesale Trade (42)—4.3 percent,
 - ◆ Transportation and Warehousing (48-49)—3.5 percent,
 - ◆ Finance and Insurance (52)—2.8 percent,
 - ◆ Information services (51)—2.3 percent,
 - ◆ Health Care and Social Assistance (62)—1.4 percent—and
 - ◆ Educational Services (61)—1.1 percent.
- The remaining nine sectors account for less than 1.0 percent of procurement each:

-
- Total dollars obligated and
 - Procurement from small and subclass businesses, as measured by:
 - ◆ Dollars obligated in contracts to small and subclass businesses,
 - ◆ The small-business and subclass procurement rate (percent of dollars to small businesses),
 - ◆ The numbers of small and subclass businesses with contracts in the sector/industry, and
 - ◆ Percentages of contractors that are small and subclass businesses.

- ◆ Retail Trade (44-45)—0.76 percent,
- ◆ Other Services (81)—0.72 percent,
- ◆ Utilities (22)—0.48 percent,
- ◆ Real Estate and Rental and Leasing (53)—0.32 percent,
- ◆ Accommodation and Food Services (72)—0.27 percent,
- ◆ Agriculture, Forestry, Fishing and Hunting (11)—0.09 percent,
- ◆ Mining, Quarrying, and Oil & Gas Extraction (21)—0.044 percent,
- ◆ Arts, Entertainment and Recreation (71)—0.014 percent—and
- ◆ Management of Companies and Enterprises (55)—0.0014 percent.

**Table 2:
Small-Business Procurement Shares by Sector**

Sector	All Contractors		Small Business Contractors				Small Businesses as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$321,433	69.9%	3,346	86.4%	78.4%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$93,557	42.0%	639	73.0%	80.3%
22, Utilities	\$2,448,202	2,539	\$138,221	5.6%	897	35.3%	51.6%
23, Construction	\$35,438,556	18,974	\$15,861,614	44.8%	14,861	78.3%	80.8%
31-33, Manufacturing	\$197,552,121	53,633	\$23,036,883	11.7%	42,253	78.8%	78.6%
42, Wholesale Trade	\$21,972,047	17,476	\$6,043,615	27.5%	13,190	75.5%	81.2%
44-45, Retail Trade	\$3,874,977	6,774	\$1,603,754	41.4%	5,124	75.6%	78.5%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$3,167,692	17.9%	3,689	67.2%	74.4%
51, Information	\$11,616,152	9,273	\$2,684,146	23.1%	5,845	63.0%	79.4%
52, Finance and Insurance	\$14,053,064		\$334,182	2.4%	334	37.7%	63.0%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$520,720	32.4%	4,112	63.6%	70.1%
54, Professional, Scientific and Technical Services	\$141,155,310	885	\$334,182	2.4%	334	37.7%	63.0%
55, Management of Companies and Enterprises	\$715	15	\$70	9.9%	3	20.0%	31.8%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$9,175,501	21.3%	16,009	76.5%	78.2%
61, Educational Services	\$5,696,328	7,716	\$1,366,983	24.0%	4,697	60.9%	58.1%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$2,188,050	31.6%	6,877	56.8%	38.9%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$50,729	68.9%	1,412	66.0%	55.2%
72, Accommodation and Food Services	\$1,367,222	5,419	\$289,799	21.2%	3,485	64.3%	58.5%
81, Other Services	\$3,688,231	13,047	\$826,632	22.4%	8,093	62.0%	60.9%

* Small-business procurement rate.

Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

2. Procurement From Small Business

Table 2 shows small-business participation in federal procurement at the sector level. Small-business procurement varies greatly from sector to sector. Depending on the sector,

- The small-business procurement rate ranges from 1.5 percent to 69.9 percent, and
- The small-business share of contractors ranges from 0.5 percent to 86.4 percent.

Table 3 shows the relationship between federal procurement in a sector and the small-business procurement rate of the sector.

- Of the four sectors where the level of procurement is above the average for all sectors, only Construction has a small-business procurement rate above the national goaling level.⁷⁰ Because their size, these sectors are essential to any effort to increase the overall small-business procurement rate. The relatively low rates suggest (although by no means guarantee) potential for increased small-business procurement in these sectors.

Percent of Total Procurement Obligations	Small-Business Procurement Rate				
	Very Low (<10%)	Low (11%–18%)	Marginal (20%–25%)	High (25%–50%)	Very High (>50%)
Less than 1%	22, 55	-	72, 81	21, 44-45, 53	11, 71
1% to 5%	52, 62	48-49	51, 61	42	-
5% to 10%	-	-	56	23	-
Over 25%	-	33-31	54	-	-
11, Agriculture, Forestry, Fishing and Hunting 21, Mining, Quarrying, and Oil & Gas Extraction 22, Utilities 23, Construction 31-33, Manufacturing 42, Wholesale Trade 44-45, Retail Trade 48-49, Transportation and Warehousing 51, Information 52, Finance and Insurance	53, Real Estate and Rental and Leasing 54, Professional, Scientific and Technical Services 55, Management of Companies and Enterprises 56, Administrative and Support, Waste Management and Remediation Services 61, Educational Services 62, Health Care and Social Assistance 71, Arts, Entertainment and Recreation 72, Accommodation and Food Services 81, Other Services				
Source: Microeconomic Applications, Inc., from FPDS–NG data.					

⁷⁰ Of these industries:

- Construction (23) has a small-business procurement rate (44.8 percent) almost twice the national goaling level;
- Professional, Scientific and Technical Services (54) has a rate (22.5 percent) just under the goaling level;
- Administrative and Support, Waste Management and Remediation Services (56) has a rate (21.3 percent) just under the goaling level; and
- Manufacturing (31-33) has a small-business procurement rate (11.7 percent) about half the national goaling level.

- Of the six sectors with between 1 and 5 percent of procurement, three have small-business procurement rates above the national goaling level; three fall well short of the goal.
- The nine very minor sectors include five of seven sectors where the small-business procurement rate is high or very high and half of the sectors where it is very low. Because procurement is so limited, these sectors offer minimal scope for increasing the overall small-business procurement rate.

Table 4 relates small-business shares of contractors in the sectors to small-business procurement rates. There is a distinct positive relationship between the two variables.

- All sectors where the small business-procurement rate is “very low” have few small-business contractors.
- In five of eight sectors where the small business procurement rate is “high” or “very high,” over 70 percent of contractors are small businesses; in two others, over 60 percent are small businesses.
- In five of eight sectors with “low” or “marginal” small-business procurement rates, 60 to 70 percent of the contractors are small businesses. The others have small-business contractor shares over 70 percent.

Table 4: Small-Business Procurement Rates and Small Business Share of Contractors					
Small-Business Share of Contractors	Small-Business Procurement Rate				
	Very Low (<10%)	Low (10%-20%)	Marginal (20%-25%)	High (25%-50%)	Very High (>50%)
Low (<60%)	22, 52, 55	-	-	-	71
Medium (60-70%)	-	48-49	51, 61, 72, 81	53, 62	-
High (>70%)	-	31-33	54, 56	21, 23, 42, 44-45	11
11, Agriculture, Forestry, Fishing and Hunting 21, Mining, Quarrying, and Oil & Gas Extraction 22, Utilities 23, Construction 31-33, Manufacturing 42, Wholesale Trade 44-45, Retail Trade 48-49, Transportation and Warehousing 51, Information 52, Finance and Insurance			53, Real Estate and Rental and Leasing 54, Professional, Scientific and Technical Services 55, Management of Companies and Enterprises 56, Administrative and Support, Waste Management and Remediation Services 61, Educational Services 62, Health Care and Social Assistance 71, Arts, Entertainment and Recreation 72, Accommodation and Food Services 81, Other Services		
Source: Microeconomic Applications, Inc., from FPDS-NG data.					

Manufacturing is something of an outlier. It has the second-highest small-business share of contractors (78.8 percent) of any sector, but it has a small-business procurement rate that is about half the goaling target and more than six percentage points below the next-lowest sector rate.

Table 2 also shows the percentages of SAM registrants in every sector that are small. At the sector level, there is a generally positive relationship between the SAM registration rate and the small-business procurement rate:

- Of the eight sectors where over 75 percent of SAM registrants are small:
 - ◆ Five have small-business procurement rates over 25 percent, and
 - ◆ Only one has a small-business procurement rate under 21 percent.
- Of the eight sectors where under 65 percent of SAM registrants are small:
 - ◆ Six have small-business procurement rates under 10 percent, and
 - ◆ None has a small-business procurement rate over 25 percent.

3. Procurement From Small Business Subclasses

The following tables show participation in federal procurement at the sector level by subclasses of small business:⁷¹

- Socially and Economically Disadvantaged Businesses (SDBs) in Table 5;
- 8(a) Businesses in Table 6;
- Veteran-Owned Businesses (VOSBs) in Table 7;
- Service-Disabled Veteran-Owned Small Businesses (SDVOSBs) in Table 8;
- Woman-Owned Small Businesses (WOSBs) in Table 9; and
- HUBZone Businesses in Table 10.

⁷¹ Data at the four-digit level of detail are provided in a somewhat briefer format in Appendices H through M.

**Table 5:
Socially and Economically Disadvantaged Business Procurement Shares, by Sector**

Sector	All Contractors		SDB Contractors				SDBs as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$49,413	10.8%	362	9.3%	18.1%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$7,881	3.5%	78	8.9%	25.9%
22, Utilities	\$2,448,202	2,539	\$27,588	1.1%	135	5.3%	18.9%
23, Construction	\$35,438,556	18,974	\$9,136,797	25.8%	4,354	22.9%	35.4%
31-33, Manufacturing	\$197,552,121	53,633	\$3,144,618	1.6%	3,869	7.2%	20.0%
42, Wholesale Trade	\$21,972,047	17,476	\$579,047	2.6%	1,471	8.4%	24.5%
44-45, Retail Trade	\$3,874,977	6,774	\$182,431	4.7%	570	8.4%	23.0%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$3,167,692	17.9%	3,689	67.2%	25.9%
51, Information	\$11,616,152	9,273	\$926,429	8.0%	891	9.6%	31.3%
52, Finance and Insurance	\$14,053,064	885	\$31,797	0.2%	39	4.4%	27.9%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$176,916	11.0%	305	4.7%	19.7%
54, Professional, Scientific and Technical Services	\$141,155,310	37,662	\$11,949,572	8.5%	5,403	14.3%	31.1%
55, Management of Companies and Enterprises	\$715	15	\$0	0.0%	0	0.0%	8.6%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$5,403,498	12.5%	3,679	17.6%	36.4%
61, Educational Services	\$5,696,328	7,716	\$476,480	8.4%	588	7.6%	24.1%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$954,894	13.8%	483	8.6%	15.7%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$13,673	18.6%	85	4.0%	21.1%
72, Accommodation and Food Services	\$1,367,222	5,419	\$94,819	6.9%	193	3.6%	16.9%
81, Other Services	\$3,688,231	13,047	\$279,061	7.6%	944	7.2%	22.0%

* SDB procurement rate.
Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

To some extent, the patterns of procurement from subclasses follow the pattern for small business as a whole. The most important examples of this are Construction (23), where procurement rates for small business and all subclasses are high,⁷² and Manufacturing (31-33), where all the procurement rates are low.⁷³ In some major sectors where the overall small-

⁷² Other industries in which procurement rates are high for small businesses and all subclasses include:

- Agriculture, Forestry, Fishing and Hunting (11) and
- Real Estate and Rental and Leasing (53).

⁷³ Other industries in which procurement rates are low for small businesses and all subclasses include:

- Utilities (22) and
- Finance and Insurance (52).

**Table 6:
8(a) Business Procurement Shares, by Sector**

Sector	All Contractors		8(a) Contractors				8(a) Businesses as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$18,110	3.9%	69	1.8%	3.8%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$2,660	1.2%	10	1.1%	4.8%
22, Utilities	\$2,448,202	2,539	\$15,787	0.6%	46	1.8%	4.4%
23, Construction	\$35,438,556	18,974	\$4,973,345	14.0%	2,402	12.7%	10.2%
31-33, Manufacturing	\$197,552,121	53,633	\$1,102,998	0.6%	677	1.3%	3.3%
42, Wholesale Trade	\$21,972,047	17,476	\$116,688	0.5%	257	1.5%	3.5%
44-45, Retail Trade	\$3,874,977	6,774	\$7,902	0.2%	78	1.2%	2.4%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$251,414	1.4%	219	4.0%	4.5%
51, Information	\$11,616,152	9,273	\$401,061	3.5%	358	3.9%	8.0%
52, Finance and Insurance	\$14,053,064	885	\$27,129	0.2%	19	2.1%	3.1%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$39,825	2.5%	80	1.2%	2.9%
54, Professional, Scientific and Technical Services	\$141,155,310	37,662	\$5,654,824	4.0%	2,744	7.3%	6.5%
55, Management of Companies and Enterprises	\$715	15	\$0	0.0%	0	0.0%	0.2%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$3,087,490	7.2%	1,843	8.8%	10.1%
61, Educational Services	\$5,696,328	7,716	\$206,992	3.6%	201	2.6%	4.5%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$301,613	4.4%	148	1.2%	2.6%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$9,797	13.3%	19	0.9%	1.8%
72, Accommodation and Food Services	\$1,367,222	5,419	\$44,042	3.2%	44	0.8%	1.7%
81, Other Services	\$3,688,231	13,047	\$80,144	2.2%	241	1.8%	2.8%

* 8(a) procurement rate.
Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

business procurement rate is marginal, subclass rates are generally equal to or somewhat above their all-sector averages.⁷⁴

⁷⁴ Examples include:

- Professional, Scientific and Technical Services (54),
- Administrative and Support, Waste Management and Remediation Services (56), and
- Educational Services (61).

**Table 7:
Veteran-Owned Small-Business Procurement Shares, by Sector**

Sector	All Contractors		VOSB Contractors				VOSBs as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$32,624	7.1%	347	9.0%	10.5%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$5,655	2.5%	56	6.4%	12.4%
22, Utilities	\$2,448,202	2,539	\$7,560	0.3%	113	4.5%	10.3%
23, Construction	\$35,438,556	18,974	\$4,044,966	11.4%	2,590	13.7%	16.7%
31-33, Manufacturing	\$197,552,121	53,633	\$3,959,197	2.0%	4,998	9.3%	13.6%
42, Wholesale Trade	\$21,972,047	17,476	\$562,000	2.6%	1,643	9.4%	15.4%
44-45, Retail Trade	\$3,874,977	6,774	\$206,954	5.3%	592	8.7%	13.9%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$724,174	4.1%	601	10.9%	15.5%
51, Information	\$11,616,152	9,273	\$298,344	2.6%	608	6.6%	16.4%
52, Finance and Insurance	\$14,053,064	885	\$80,366	0.6%	34	3.8%	10.2%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$100,577	6.3%	383	5.9%	9.0%
54, Professional, Scientific and Technical Services	\$141,155.310	37,662	\$7,489,901	5.3%	3,859	10.2%	17.3%
55, Management of Companies and Enterprises	\$715	15	\$0	0.0%	0	0.0%	4.5%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$2,210,861	5.1%	2,551	12.2%	19.7%
61, Educational Services	\$5,696,328	7,716	\$329,788	5.8%	904	11.7%	16.6%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$515,792	7.5%	924	7.6%	8.1%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$13,673	18.6%	85	4.0%	21.1%
72, Accommodation and Food Services	\$1,367,222	5,419	\$94,819	6.9%	193	3.6%	16.9%
81, Other Services	\$3,688,231	13,047	\$279,061	7.6%	944	7.2%	22.0%

* VOSB procurement rate.
Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

Examining subsector procurement rates relative to small-business procurement rates provides further insight into areas where procurement from individual subclasses is relatively high or low. Table 11 shows procurement rates for subclasses, by sector, as percentages of the corresponding small-business procurement rate. All-sector averages for each subclass are provided as benchmarks. Among the other results:

- Subclass procurement rates in Manufacturing (31-33) are consistently low relative to the (already low) small-business procurement rate;

**Table 8:
Service-Disabled Veteran-Owned Small-Business Procurement Shares, by Sector**

Sector	All Contractors		SDVOSB Contractors				SDVOSBs as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$7,681	1.7%	95	2.5%	5.2%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$4,096	1.8%	26	3.0%	7.6%
22, Utilities	\$2,448,202	2,539	\$5,110	0.2%	45	1.8%	6.5%
23, Construction	\$35,438,556	18,974	\$3,331,862	9.4%	1,584	8.3%	11.1%
31-33, Manufacturing	\$197,552,121	53,633	\$1,236,830	0.6%	1,540	2.9%	6.4%
42, Wholesale Trade	\$21,972,047	17,476	\$233,595	1.1%	646	3.7%	8.3%
44-45, Retail Trade	\$3,874,977	6,774	\$32,261	0.8%	229	3.4%	6.8%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$372,466	2.1%	228	4.2%	8.7%
51, Information	\$11,616,152	9,273	\$166,772	1.4%	256	2.8%	9.9%
52, Finance and Insurance	\$14,053,064	885	\$77,247	0.5%	19	2.1%	5.7%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$69,981	4.4%	112	1.7%	4.5%
54, Professional, Scientific and Technical Services	\$141,155.310	37,662	\$4,733,969	3.4%	1,736	4.6%	10.0%
55, Management of Companies and Enterprises	\$715	15	\$0	0.0%	0	0.0%	2.6%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$1,530,429	3.6%	1,268	6.1%	13.1%
61, Educational Services	\$5,696,328	7,716	\$156,680	2.8%	367	4.8%	10.1%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$330,137	4.8%	277	2.3%	4.7%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$3,283	4.5%	44	2.1%	5.0%
72, Accommodation and Food Services	\$1,367,222	5,419	\$13,244	1.0%	45	0.8%	3.0%
81, Other Services	\$3,688,231	13,047	\$119,239	3.2%	426	3.3%	6.3%

* SDVOSB procurement rate.

Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

- Subclass procurement rates in Wholesale Trade (42) are consistently low relative to the modestly high small-business procurement rate;
- Subclass procurement rates in Construction are consistently high relative to the (already high) small-business procurement rate;
- Compared with the small-business procurement rate in Professional, Scientific and Technical Services, subclass procurement rates are:
 - ◆ Relatively high for SDBs, VOSBs, SDVOSBs, and WOSBs,
 - ◆ Relatively low for HUBZone businesses, and
 - ◆ About on par with all small businesses for 8(a) businesses.

**Table 9:
Woman-Owned Small-Business Procurement Shares, by Sector**

Sector	All Contractors		WOSB Contractors				WOSBs as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$63,547	13.8%	592	15.3%	15.1%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$13,196	5.9%	88	10.1%	15.4%
22, Utilities	\$2,448,202	2,539	\$26,830	1.1%	119	4.7%	10.8%
23, Construction	\$35,438,556	18,974	\$2,853,763	8.1%	2,579	13.6%	17.8%
31-33, Manufacturing	\$197,552,121	53,633	\$2,764,697	1.4%	6,163	11.5%	16.8%
42, Wholesale Trade	\$21,972,047	17,476	\$428,073	1.9%	2,216	12.7%	20.8%
44-45, Retail Trade	\$3,874,977	6,774	\$320,100	8.3%	981	14.5%	20.6%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$228,392	1.3%	660	12.0%	17.5%
51, Information	\$11,616,152	9,273	\$294,685	2.5%	1,205	13.0%	21.0%
52, Finance and Insurance	\$14,053,064	885	\$119,168	0.8%	49	5.5%	18.2%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$190,169	11.8%	650	10.1%	13.4%
54, Professional, Scientific and Technical Services	\$141,155,310	37,662	\$6,605,408	4.7%	6,485	17.2%	24.0%
55, Management of Companies and Enterprises	\$715	15	\$70	9.8%	1	6.7%	4.3%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$1,913,281	4.4%	4,948	23.6%	26.1%
61, Educational Services	\$5,696,328	7,716	\$346,712	6.1%	1,530	19.8%	22.0%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$698,854	10.1%	1,782	14.7%	13.8%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$15,460	21.0%	440	20.6%	22.8%
72, Accommodation and Food Services	\$1,367,222	5,419	\$86,196	6.3%	726	13.4%	11.7%
81, Other Services	\$3,688,231	13,047	\$176,952	4.8%	1,414	10.8%	14.6%

* WOSB procurement rate.

Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

**Table 10:
HUBZone Business Procurement Shares, by Sector**

Sector	All Contractors		Small Business Contractors				HUBZone Businesses as a Percent of SAM Registrants
	Obligations (\$1,000s)	Number of Firms	Obligations		Firms		
			Value (\$1,000s)	Share (%)*	Number of Firms	Share (%)	
11, Agriculture, Forestry, Fishing and Hunting	\$459,608	3,874	\$51,077	11.1%	320	8.3%	6.0%
21, Mining, Quarrying, and Oil & Gas Extraction	\$222,497	875	\$6,797	3.1%	49	5.6%	7.2%
22, Utilities	\$2,448,202	2,539	\$22,020	0.9%	29	1.1%	3.0%
23, Construction	\$35,438,556	18,974	\$3,821,665	10.8%	1,733	9.1%	6.3%
31-33, Manufacturing	\$197,552,121	53,633	\$1,290,573	0.7%	1,015	1.9%	2.7%
42, Wholesale Trade	\$21,972,047	17,476	\$94,451	0.4%	283	1.6%	2.6%
44-45, Retail Trade	\$3,874,977	6,774	\$79,232	2.0%	140	2.1%	2.1%
48-49, Transportation and Warehousing	\$17,691,430	5,490	\$45,745	0.3%	143	2.6%	2.6%
51, Information	\$11,616,152	9,273	\$44,208	0.4%	112	1.2%	2.2%
52, Finance and Insurance	\$14,053,064	885	\$556	0.0%	4	0.5%	0.9%
53, Real Estate and Rental and Leasing	\$1,605,089	6,465	\$35,831	2.2%	77	1.2%	1.5%
54, Professional, Scientific and Technical Services	\$141,155.310	37,662	\$1,013	0.7%	844	2.2%	2.1%
55, Management of Companies and Enterprises	\$715	15	\$0	0.0%	0	0.0%	0.2%
56, Administrative and Support, Waste Management and Remediation Services	\$43,086,067	20,923	\$1,054,674	2.4%	871	4.2%	3.8%
61, Educational Services	\$5,696,328	7,716	\$51,370	0.9%	69	0.9%	1.4%
62, Health Care and Social Assistance	\$6,913,478	12,113	\$106,858	1.5%	59	0.5%	0.6%
71, Arts, Entertainment and Recreation	\$73,649	2,140	\$3,520	4.8%	15	0.7%	0.8%
72, Accommodation and Food Services	\$1,367,222	5,419	\$42,652	3.1%	39	0.7%	0.9%
81, Other Services	\$3,688,231	13,047	\$48,921	1.3%	176	1.3%	1.4%

* HUBZone business procurement rate.

Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

Table 11: Subclass Procurement Rates as Percentages of Small-Business Procurement Rates, by Sector						
Sector	Small Business Sub-Class					
	SDB	8(a)	VOSB	SDVOSB	WOSB	HUBZone
11, Agriculture, Forestry, Fishing and Hunting	15.5%	5.6%	10.2%	2.4%	19.7%	15.9%
21, Mining, Quarrying, and Oil & Gas Extraction	8.3%	2.9%	6.0%	4.3%	14.0%	7.4%
22, Utilities	19.6%	10.7%	5.4%	3.6%	19.6%	16.1%
23, Construction	57.6%	31.3%	25.4%	21.0%	18.1%	18.1%
31-33, Manufacturing	13.7%	5.1%	17.1%	5.1%	12.0%	6.0%
42, Wholesale Trade	9.5%	1.8%	9.5%	4.0%	6.9%	1.5%
44-45, Retail Trade	11.4%	0.5%	12.8%	1.9%	20.0%	4.8%
48-49, Transportation and Warehousing	14.5%	7.8%	22.9%	11.7%	7.3%	1.7%
51, Information	34.6%	15.2%	11.3%	6.1%	10.8%	1.7%
52, Finance and Insurance	8.3%	8.3%	25.0%	20.8%	33.3%	0.0%
53, Real Estate and Rental and Leasing	34.0%	7.7%	19.4%	13.6%	36.4%	6.8%
54, Professional, Scientific and Technical Services	37.8%	17.8%	23.6%	15.1%	20.9%	3.1%
55, Management of Companies and Enterprises	0.0%	0.0%	0.0%	0.0%	99.0%	0.0%
56, Administrative and Support, Waste Management and Remediation Services	58.7%	33.8%	23.9%	16.9%	20.7%	11.3%
61, Educational Services	35.0%	15.0%	24.2%	11.7%	25.4%	3.8%
62, Health Care and Social Assistance	43.7%	13.9%	23.7%	15.2%	32.0%	4.7%
71, Arts, Entertainment and Recreation	27.0%	19.3%	13.1%	6.5%	30.5%	7.0%
72, Accommodation and Food Services	32.5%	15.1%	11.8%	4.7%	29.7%	14.6%
81, Other Services	33.9%	9.8%	20.5%	14.3%	21.4%	5.8%
Average	35.1%	17.8%	21.5%	12.6%	17.8%	4.2%

Source: Microeconomic Applications, Inc., from FPDS-NG data.

The percentages in Table 11 can also be interpreted to identify sectors in which—correcting for variations among sectors in small-business procurement rates—each subclass has low procurement rates. It is probably reasonable, for example, to say that a subclass is getting less than its share of procurement in any sector where the sector percentage relative to small business is less than half the all-sector average for that subclass.

Tables 5–10 also show SAM registration rates for each class. There are substantial differences in the percentages of SAM registrants that are in each subclass. SDBs have the most

(27.2%),⁷⁵ followed by WOSBs (19.6 percent), VOSBs (15.1 percent), SDVOSBs (8.8 percent), 8(a) businesses (5.8 percent), and HUBZone businesses (2.9 percent). Given these differences in registration rates, it is not surprising that SDBs have substantially the highest procurement rate and HUBZone businesses have the lowest.

At the two-digit level, the relationship across sectors between subclass procurement rates and SAM registration rates is discernible but not as strong as for small businesses as a whole. Construction (23)—with the highest procurement rate for all classes—has the highest SAM registration rates, while Management of Companies and Enterprises (55)—a small and most unpromising market—has the lowest registration rates. The lowest procurement rates tend to be associated with relatively low SAM registrations rates, and higher procurement rates with higher registration rates. There are, however, also cases—particularly in certain sectors—in which a low SAM registration rate is associated with a high procurement rate⁷⁶ or a high SAM registration rate is associated with a low procurement rate.⁷⁷

C. CROSS-SECTOR ANALYSIS

Data on aggregated industry levels tend to average out large differences in more detailed industries. Drilling down through NAICS levels, as was done in the sector analysis (see Appendix F), provides detail, but the information is fragmented and can be difficult to synthesize. Many six-digit industries are quite small in terms of level of procurement and/or number of contractors. Such industries are not very meaningful from either a statistical or policy perspective. A broader perspective, looking at large industries across sectors, is a useful complement to industry analysis.

⁷⁵ SAM registration rates at the two-digit level and for all industry are computed by adding up data on numbers of SAM registrants at the four-digit level. The absolute numbers are not reliable because of double-counting issues, but comparisons of SAM registration rates (which are subject to the same biases) are less likely to be affected.

⁷⁶ For example:

- For SDBs, half of the SAM registration rates below 20 percent (three quarters of the average) are in sectors (NAICS 11, 53 & 62) where the procurement rate is over 10 percent (1.5 times the average);
- For VOSBs, there are sectors (NAICS 11, 53, 62 & 71) with SAM registration rates of 10.5 percent or less (two-thirds of the average) and procurement rates of 6 percent or more (1.5 times the average);
- For WOSBs, there are sectors (NAICS 53 & 62) with SAM registration rates about two-thirds the average and procurement rates over 10 percent (twice the average).

⁷⁷ For example:

- For WOSBs, there are sectors (NAICS 42 & 51) with SAM registration rates above average and procurement rates well below average;
- FOR SDVOSBs, there are sectors (NAICS 48-49 & 51) with SAM registration rates above average and procurement rates below average;
- For VOSBs, there are sectors (NAICS 42 & 51) with SAM registration rates above average and procurement rates below average.

The following discussion examines characteristics of the 113 six-digit industries with the highest procurement levels—over \$500 million.

1. Small-Business Participation

Participation refers to the degree of involvement of small businesses in federal contracting. Participation of small businesses occurs—and can differ—at a number of stages.

- **Availability of Small Businesses**—the percent (or number) of small businesses willing and able to do contracting work in a given industry, which is represented by the small-business SAM registration rate.⁷⁸
- **Share of Contractors**—the percent of contractors in a given industry that are small. The link between the share of SAM registration and the share of contractors is the percent of SAM registrants in an industry that are contractors in that industry. In absolute terms this is the participation rate. Another measure—the participation ratio⁷⁹—measures small-business participation relative to large-business participation.
- **Procurement Rate**—the percent (or level) of contract dollars that goes to small businesses.

A participation rate is typically compared to a benchmark to assess whether it is “high” or “low.” We use goals (where they exist) as a benchmark for procurement rates. For all of the participation measures we use all-industry averages as benchmarks.⁸⁰ Participation at the previous stage also serves as a benchmark. Thus:

⁷⁸ Analysis based on Census data implicitly adds another level of participation—the percent (or number) of businesses in the economy that are willing and able to do government contracting. Such analysis uses the percent of businesses in the economy as the link between availability and actually being a contractor. We use a participation rate based on SAM registration. The difference between these measures is made up entirely of businesses that are not interested in government contracting. Consequently, a Census-based procurement rate tends to be distorted for most purposes. It is relevant only when one of the issues is whether businesses are dissuaded (e.g., by discrimination) from even trying to enter the government market. Even then, a measure such as SAM registration should be used to separate out the effects of such a factor.

⁷⁹ The ratio is the small-business participation rate divided by the large-business participation rate. This ratio yields more easily interpreted information on the relative participation of small businesses. A value greater than one means that proportionally more small SAM registrants than large SAM registrants are contractors.

⁸⁰ For small businesses as a whole:

- The average SAM registration rate is 75.1 percent;
- The average participation rate is 20.4 percent;
- The average participation ratio is about 0.679; and
- The average share of contractors is 72.1 percent.

- The share of SAM registrants serves as a benchmark for the share of contractors; this relationship is also reflected in the participation rate and participation ratio.
- The small-business share of contractors serves as a benchmark for the procurement rate.⁸¹

The word “participation” tends to evoke a perspective of counting businesses. From this perspective, the question is whether:

- Small businesses are unavailable—a low small-business SAM registration rate—or
- Available small businesses are not getting contracts—low participation rates or ratios and low contractor shares—or
- Both.

The relationship among measures of participation is more complicated than such an either/or question suggests. Among other things:

- If unavailability is the problem, one would expect a low contractor share and a relatively high participation rate as well as a low SAM registration rate;
- If lack of small-business contracting is the problem, one would expect a relatively high SAM registration rate and a low small-business share of contractors as well as a low participation rate.

The following tables provide these measures of small-business participation for industries with more than \$500 million in procurement:

- Table 12 provides data for industries with very low small-business procurement rates (less than 10 percent);
- Table 13 provides data for industries with small-business procurement rates in the low to intermediate range (10 to 25 percent);
- Table 14 provides data for industries with small-business procurement rates in the high to very high range (over 25 percent); and
- Table 15 provides summary statistics for these industries.

Data in these tables include:

- Total industry procurement;
- The numbers of small contractors (FPDS) and small SAM registrants;

⁸¹ Census data provide small-business shares of revenue in the economy as a benchmark—a distorted one, as noted—for the procurement rate. Analysis that uses SAM data has no such measure available.

- Measures of small-business participation in contracting, including:

Industry	Value of Contracts (\$million)	Number of Small Businesses		Number of Large Businesses		Small Business Percentages			Small Business Participation	
		FPDS	SAM	FPDS	SAM	Value	FPDS	SAM	Par. Rate	Par. Ratio
221122, Electric Power Distribution	\$1,043	148	815	537	663	4.9%	21.6%	55.1%	18.2%	0.224
311615, Poultry Processing	\$551	26	102	28	28	1.9%	48.1%	78.5%	25.5%	0.255
332313, Plate Work Manufacturing	\$572	169	1449	32	94	4.2%	84.1%	93.9%	11.7%	0.343
325412, Pharmaceutical Preparation Manufacturing	\$4,475	271	604	266	234	1.3%	50.5%	72.1%	44.9%	0.395
325414, Biological Product (except Diagnostic) Manufacturing	\$2,002	148	347	107	86	4.5%	58.0%	80.1%	42.7%	0.343
332410, Power Boiler and Heat Exchanger Manufacturing	\$1,249	145	384	49	53	0.8%	74.7%	87.9%	37.8%	0.408
334419, Other Electronic Component Manufacturing	\$1,790	1,403	2,412	620	718	9.3%	69.4%	77.1%	58.2%	0.674
334511, Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	\$9,881	1,105	2,095	689	1,236	5.1%	61.6%	62.9%	52.7%	0.946
336111, Automobile Manufacturing	\$1,043	41	165	45	100	1.4%	47.7%	62.3%	24.8%	0.552
336411, Aircraft Manufacturing	\$47,682	622	1,249	278	389	1.9%	69.1%	76.3%	49.8%	0.697
336412, Aircraft Engine and Engine Parts Manufacturing	\$5,421	606	1,309	272	382	2.6%	69.0%	77.4%	46.3%	0.650
336413, Other Aircraft Parts and Auxiliary Equipment Manufacturing	\$13,746	2,586	3,221	803	983	8.4%	76.3%	76.6%	80.3%	0.983
336414, Guided Missile and Space Vehicle Manufacturing	\$12,985	25	397	80	265	0.1%	23.8%	60.0%	6.3%	0.209
336415, Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	\$977	117	449	57	151	0.4%	67.2%	74.8%	26.1%	0.690
336419, Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	\$2,087	211	908	111	331	2.4%	65.5%	73.3%	23.2%	0.693
336611, Ship Building and Repairing	\$17,146	1,156	1,188	422	265	7.4%	73.3%	81.8%	97.3%	0.611
336992, Military Armored Vehicle, Tank, and Tank Component Manufacturing	\$6,532	528	1,400	137	435	3.5%	79.4%	76.3%	37.7%	1.197
424210, Drugs and Druggists Sundries Merchant Wholesalers	\$5,335	115	657	122	159	1.5%	48.5%	80.5%	17.5%	0.228
424490, Other Grocery and Related Products Merchant Wholesalers	\$3,046	152	623	84	230	3.7%	64.4%	73.0%	24.4%	0.668
424720, Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	\$2,586	483	1,027	146	521	7.5%	76.8%	66.3%	47.0%	1.678
488190, Other Support Activities for Air Transportation	\$4,492	325	1,709	195	549	4.2%	62.5%	75.7%	19.0%	0.535
488510, Freight Transportation Arrangement	\$825	54	1445	67	540	0.2%	44.6%	72.8%	3.7%	0.301

522390, Other Activities Related to Credit Intermediation	\$829	6	117	19	117	1.2%	24.0%	50.0%	5.1%	0.316
524114, Direct Health and Medical Insurance Carriers	\$11,278	6	109	41	108	0.4%	12.8%	50.2%	5.5%	0.145
Industry	Value of Contracts (\$million)	Number of Small Businesses		Number of Large Businesses		Small Business Percentages			Small Business Participation	
		FPDS	SAM	FPDS	SAM	Value	FPDS	SAM	Par. Rate	Par. Ratio
541720, Research and Development in the Social Sciences & Humanities	\$1,490	466	3,268	411	1,467	9.3%	53.1%	69.0%	14.3%	0.509
541990, All Other Professional, Scientific, and Technical Services	\$9,793	3,294	14,442	1,977	4,150	8.8%	62.5%	77.7%	22.8%	0.479
562211, Hazardous Waste Treatment and Disposal	\$2,028	220	1,299	168	1,130	5.0%	56.7%	53.5%	16.9%	1.139
611310, Colleges, Universities, and Professional Schools	\$660	143	694	936	2,415	0.6%	13.3%	22.3%	20.6%	0.532
621111, Offices of Physicians (except Mental Health Specialists)	\$1,609	1,659	1,759	680	859	6.5%	70.9%	67.2%	94.3%	1.191
621491, HMO Medical Centers	\$1,153	0	127	30	61	0.0%	0.0%	67.6%	0.0%	0.000
622110, General Medical and Surgical Hospitals	\$1,129	9	735	1,342	1,202	3.9%	0.7%	37.9%	1.2%	0.011
722310, Food Service Contractors	\$1,009	34	1,160	630	433	3.9%	5.1%	72.8%	2.9%	0.020
811111, General Automotive Repair	\$535	343	1836	173	854	3.5%	66.5%	68.3%	18.7%	0.922
All	\$176,979	16,616	49,501	11,554	21,208	3.7%	59.0%	70.0%	33.6%	0.616

Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.

- ◆ The small-business procurement rate (“Value”),
- ◆ The percent of contractors that are small (“FPDS”),
- ◆ The percent of SAM registrants that are small (“SAM”),
- ◆ The small-business participation rate (“Par. Rate”), and
- ◆ The small-business participation ratio (“Par. Ratio”).

An initial perusal of averages in Tables 12, 13, and 14 provides mixed results. By design, the average small-business procurement rate in Table 12 is lower (by nearly 15 percentage points) than the rate in Table 13, and the rate in Table 14 is higher (by over 20 percentage points) than the rate in Table 13. The contractor shares (“FPDS”) and registration rates (“SAM”) are both relatively low in Table 12 and relatively high in Table 14. The participation rate and ratio in Table 12 break the pattern, however: Both are not only higher than those in Tables 13 and 14, they are above the all-industry averages. This occurs despite the fact that 24 of the 32 industries have small-business procurement rates below 5.0 percent.

The industries in Table 12, which have very low procurement rates, are dominated by manufacturing. Thirteen of the 32 industries are in that sector, and a majority—nine—of those are in Transportation Equipment Manufacturing (336). All six six-digit industries in Aerospace

Product and Parts Manufacturing (3364) have procurement rates below 10 percent—five of them below 3 percent. Pharmaceutical and Medicine Manufacturing (3254) also has two six-digit industries in Table 12. Manufacturing is even more dominant in industries with over \$5 billion in procurement. Seven of these nine industries are in Manufacturing (four of those in Aerospace Product and Parts Manufacturing).

The participation measures vary widely. The share of contractors, the participation rate, and the percent of SAM registrants run as high as 80 percent, and the first two run down into single-digit percentages. There is some consistency among measures of participation at the bottom of the distribution.⁸² Even here, however, relationships are inconsistent.⁸³

For industries in Table 12, there is some discernible positive association between procurement ratios and small-business procurement rates. Among other things:

- Four of the five industries with procurement ratios over 0.900 are among the eight industries with small-business procurement rates of 5 percent or more;
- Four of the five industries with the highest small-business procurement rates—over 8 percent⁸⁴—have participation ratios at or above the all-industry average; and

⁸² Taking the five measures of participation—SAM registration rates, participation rates, participation ratios, contractor shares, and small-business procurement rate:

- Six industries are in the lowest quartile (lowest eight industries) on four or all five measures (and all are below the median on all five measures). These industries are:
 - ◆ Guided Missile and Space Vehicle Manufacturing (336114),
 - ◆ Other Activities Related to Credit Intermediation (522390),
 - ◆ Direct Health and Medical Insurance Carriers (524114),
 - ◆ Colleges, Universities, and Professional Schools (611310),
 - ◆ HMO Medical Centers (621491), and
 - ◆ General Medical and Surgical Hospitals (622110).
- Six other industries are below the median on four or all five measures:
 - ◆ Electric Power Distribution (221122),
 - ◆ Pharmaceutical Preparation Manufacturing (325412),
 - ◆ Automobile Manufacturing (336111),
 - ◆ Drugs and Druggists Sundries Merchant Wholesalers (424210),
 - ◆ Freight Transportation Arrangement (488510), and
 - ◆ Research and Development in the Social Sciences and Humanities (541720).

⁸³ The inconsistency is illustrated in four industries at the bottom of Table III-55:

- General Medical and Surgical Hospitals (622110) has consistently much higher participation statistics than Food Service Contractors (722310), but both have the same procurement rate;
- Direct Health and Medical Insurance Carriers (524114) has substantially better procurement statistics than Food Service Contractors (722310) and (except for SAM registration) General Medical and Surgical Hospitals (622110), but its procurement rate is far lower.

⁸⁴ These industries are:

- Other Electronic Component Manufacturing (334419),
- Other Aircraft Parts and Auxiliary Equipment Manufacturing (336413),

**Table 13:
Measures of Small-Business Participation in Industries With Over \$500 Million in Procurement and
With Small-Business Procurement Rates Between 10 Percent and 25 Percent**

Industry	Value of Contracts (\$million)	Number of Small Businesses		Number of Large Businesses		Small Business Percentages			Small Business Participation	
		FPDS	SAM	FPDS	SAM	Value	FPDS	SAM	Par. Rate	Par. Ratio
324110, Petroleum Refineries	\$18,294	302	197	173	131	14.9%	63.6%	60.1%	#	#
332993, Ammunition (except Small Arms) Manufacturing	\$2,770	118	266	84	84	12.5%	58.4%	76.0%	44.4%	0.444
332995, Other Ordnance and Accessories Manufacturing	\$552	631	1	159	4	24.5%	79.9%	20.0%	#	#
333120, Ammunition (except Small Arms) Manufacturing	\$770	355	826	138	155	13.2%	72.0%	84.2%	43.0%	0.483
333314, Telephone Apparatus Manufacturing	\$754	578	1,146	214	258	15.9%	73.0%	81.6%	50.4%	0.608
333319, Other Commercial & Service Industry Machinery Manufacturing	\$1,309	969	5	320	5	23.6%	75.2%	50.0%	#	#
334210, Telephone Apparatus Manufacturing	\$947	422	1,310	250	204	22.1%	62.8%	86.5%	32.2%	0.263
334220, Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	\$5,315	1,416	2,956	622	849	14.8%	69.5%	77.7%	47.9%	0.654
334290, Other Communications Equipment Manufacturing	\$2,140	1,203	2,902	437	618	23.2%	73.4%	82.4%	41.5%	0.586
334510, Electromedical and Electrotherapeutic Apparatus Manufacturing	\$573	507	1,078	280	205	12.3%	64.4%	84.0%	47.0%	0.344
336212, Truck Trailer Manufacturing	\$831	230	631	55	77	15.6%	80.7%	89.1%	36.5%	0.510
424410, General Line Grocery Merchant Wholesalers	\$1,872	394	405	177	198	18.5%	69.0%	67.2%	97.3%	1.088
481212, Nonscheduled Chartered Freight Air Transportation	\$3,504	190	778	35	102	18.5%	84.4%	88.4%	24.4%	0.712
483111, Deep Sea Freight Transportation	\$3,534	75	486	78	178	24.1%	49.0%	73.2%	15.4%	0.352
517110, Wired Telecommunications Carriers	\$4,222	424	2,648	576	1,470	22.6%	42.4%	64.3%	16.0%	0.409
517919, All Other Telecommunications	\$1,120	315	2,711	309	834	10.1%	50.5%	76.5%	11.6%	0.314
541310, Architectural Services	\$1,253	824	4,371	643	3,067	23.5%	56.2%	58.8%	18.9%	0.899
541330, Engineering Services	\$33,436	3,808	24,244	2,217	6,861	15.0%	63.2%	77.9%	15.7%	0.486
541611, Administrative Management and General Management Consulting Services	\$10,744	3,198	22,232	1,448	5,169	24.5%	68.8%	81.1%	14.4%	0.513
541614, Process, Physical Distribution, and Logistics Consulting Services	\$1,574	314	6,892	223	2,103	13.9%	58.5%	76.6%	4.6%	0.430
541618, Other Management Consulting Services	\$1,776	744	14,524	440	3,205	16.6%	62.8%	81.9%	5.1%	0.373

- Research and Development in the Social Sciences and Humanities (541720), and
- All Other Professional, Scientific, and Technical Services (541990).

541710, Research and Development in the Physical, Engineering, and Life Sciences	\$39,710	5,325	13,078	2,621	3,120	18.7%	67.0%	80.7%	40.7%	0.485
541930, Translation and Interpretation Services	\$1,250	564	2,231	199	568	21.8%	73.9%	79.7%	25.3%	0.722
561210, Facilities Support Services	\$23,286	1,492	9,181	794	3,419	12.9%	65.3%	72.9%	16.3%	0.700
Industry	Value of Contracts (\$million)	Number of Small Businesses		Number of Large Businesses		Small Business Percentages			Small Business Participation	
		FPDS	SAM	FPDS	SAM	Value	FPDS	SAM	Par. Rate	Par. Ratio
561499, All Other Business Support Services	\$587	333	3,676	270	784	17.6%	55.2%	82.4%	9.1%	0.263
561611, Investigation Services	\$641	709	2,465	99	356	10.6%	87.7%	87.4%	28.8%	1.034
561612, Security Guards and Patrol Services	\$4,223	385	2,503	359	566	21.0%	51.7%	81.6%	15.4%	0.243
561990, All Other Support Services	\$1,739	982	4,423	646	1,283	13.4%	60.3%	77.5%	22.2%	0.441
611710, Educational Support Services	\$724	1,524	5,518	908	3,332	19.3%	62.7%	62.4%	27.6%	1.013
611519, Other Technical and Trade Schools	\$1,202	175	1,980	155	784	19.6%	53.0%	71.6%	8.8%	0.447
811213, Communication Equipment Repair and Maintenance	\$719	612	2,513	383	850	15.2%	61.5%	74.7%	24.4%	0.540
811219, Other Electronic and Precision Equipment Repair and Maintenance	\$807	1,549	3,290	968	1,042	11.9%	61.5%	75.9%	47.1%	0.507
811310, Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	\$635	2,078	4,178	1,073	2,168	23.7%	65.9%	65.8%	49.7%	1.005
All	\$172,814	32,745	145,645	17,353	44,049	17.1%	65.4%	76.8%	22.5%	0.571
# Single-digit SAM data do not warrant a computation, as the FPDS data show many more businesses in the same industries. Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.										

- Six of the seven industries with procurement rates of 1.5 percent or less are among the ten industries with procurement ratios of 0.410.

It is a reach, however, to call this a functional relationship. The differences in procurement rates are small—half a dozen percentage points—and the comparisons are among industries with very low small-business procurement rates.

Table 13 shows large industries with small-business procurement rates between 10 and 25 percent. The 33 industries also include a high concentration in Manufacturing (31-33)—11 industries—as well as in Professional, Scientific, and Technical Services (541)—seven industries. Five industries are in Administrative and Support Services (561), and three are in Repair and Maintenance (811). Among the four-digit industries, Management, Scientific, and

Technical Consulting Services (5416) has three six-digit industries and five other four-digit industries⁸⁵ have two six-digit industries each.

The measures of small-business participation vary widely—as they do in Table 12—except at the bottom end of the distribution. None of the small-business shares of contractors or SAM registration rates is below 50 percent in Table 13.⁸⁶ The values of participation measures are somewhat higher in Table 13 than in Table 12, but (except for the first quartiles) summary statistics differ by no more than a few percentage points.

Table 13 also shows a major—but apparently fairly isolated—discrepancy between FPDS data and SAM data. In three industries,⁸⁷ FPDS data report more small contractors than SAM data report small registrants. In two of these industries, the reported total number of SAM registrants is in single digits.

Table 13 shows a generally positive but not very precise relationship between measures of participation and the small-business procurement rate. Industries with the lowest small-business procurement rates tend to have low-to-average participation measures, but there are exceptions.⁸⁸ Industries with high procurement rates tend to have average-to-high participation measures, but again there are exceptions.⁸⁹ Different combinations of high-procurement measures can produce

⁸⁵ These industries are:

- Other Fabricated Metal Product Manufacturing (3329),
- Communications Equipment Manufacturing (3342),
- Architectural, Engineering, and Related Services (5413),
- Investigation and Security Services (5616), and
- Electronic and Precision Equipment Repair and Maintenance (8112).

⁸⁶ An apparent exception, Other Ordnance and Accessories Manufacturing (332995), clearly has corrupt SAM data—as do Petroleum Refineries (324110) and Other Commercial & Service Industry Machinery Manufacturing (333319).

⁸⁷ These industries are:

- Petroleum Refineries (324110),
- Other Ordnance and Accessories Manufacturing (332995), and
- Other Commercial and Service Industry Machinery Manufacturing (333319).

Table 14 includes three other industries with this sort of discrepancy.

⁸⁸ Investigation Services (561611), for example, has the second-lowest procurement rate in this group of industries, despite consistently very-high participation measures.

⁸⁹ Deep Sea Freight Transportation (483111), for example, has the second-highest procurement rate despite below-average participation measures.

similar results, so it is difficult to settle on any one measure or use the combination to predict the procurement rate.⁹⁰ The big-picture issue is that participation measures do not explain why an

**Table 14:
Measures of Small-Business Participation in Industries With Over \$500 Million in Procurement and With Small-Business Procurement Rates of More than 25 Percent**

Industry	Value of Contracts (\$million)	Number of Small Businesses		Number of Large Businesses		Small Business Percentages			Small Business Participation	
		FPDS	SAM	FPDS	SAM	Value	FPDS	SAM	Par. Rate	Par. Ratio
236210, Industrial Building Construction	\$1,619	771	10,392	221	2,657	43.3%	77.7%	79.6%	7.4%	0.892
236220, Commercial and Institutional Building Construction	\$21,569	4,278	16,833	1,249	3,318	41.6%	77.4%	83.5%	25.4%	0.675
237110, Water and Sewer Line and Related Structures Construction	\$576	849	8,994	223	2,562	54.4%	79.2%	77.8%	9.4%	1.084
237310, Highway, Street, and Bridge Construction	\$1,727	1,413	9,384	307	2,501	57.9%	82.2%	79.0%	15.1%	1.227
237990, Other Heavy and Civil Engineering Construction	\$4,753	1,468	9,369	383	2,415	43.5%	79.3%	79.5%	15.7%	0.988
238210, Electrical Contractors and Other Wiring Installation Contractors	\$790	2,424	12,082	645	2,839	57.7%	79.0%	81.0%	20.1%	0.883
238220, Plumbing, Heating, and Air-Conditioning Contractors	\$807	2,565	9,420	566	2,550	77.9%	81.9%	78.7%	27.2%	1.227
238990, All Other Specialty Trade Contractors	\$1,225	2,110	12,181	516	2,377	41.7%	80.4%	83.7%	17.3%	0.798
311421, Fruit and Vegetable Canning	\$672	48	129	25	27	28.7%	65.8%	82.7%	37.2%	0.402
311611, Animal (except Poultry) Slaughtering	\$941	57	73	33	17	29.7%	63.3%	81.1%	78.1%	0.402
315211, Men's and Boys' Cut and Sew Apparel Contractors	\$538	165	4	86	5	28.2%	65.7%	44.4%	#	#
315999, Other Apparel Accessories and Other Apparel Manufacturing	\$1,134	611	3	152	10	45.1%	80.1%	23.1%	#	#
334111, Electronic Computer Manufacturing	\$3,006	979	2,405	355	375	39.5%	73.4%	86.5%	40.7%	0.430
334516, Analytical Laboratory Instrument Manufacturing	\$714	1,493	1,739	606	655	32.0%	71.1%	72.6%	85.9%	0.928
334517, Irradiation Apparatus Manufacturing	\$514	104	297	70	88	26.2%	59.8%	77.1%	35.0%	0.440
334519, Other Measuring and Controlling Device Manufacturing	\$689	1,374	2,162	479	482	45.3%	74.2%	81.8%	63.6%	0.640

⁹⁰ General Line Grocery Merchant Wholesalers (424410) and Nonscheduled Chartered Freight Air Transportation (481212) provide an example. Both have small-business procurement rates of 18.5 percent—just above the median for Table 13. The patterns of participation vary:

- Grocery Wholesalers has shares of small contractors and SAM registrants that are at or below the median and a participation rate and participation ratio that are in the fourth quartile;
- Nonscheduled Air Freight has a small-business participation rate that is below the median but other measures that are in the fourth quartile—and well above those for Grocery Wholesalers.

Looking at the participation measures, one would expect higher procurement rates for both industries and (probably) a higher rate for Nonscheduled Air Freight than for Grocer Wholesalers.

335999, All Other Miscellaneous Electrical Equipment and Component Manufacturing	\$627	1,263	2,560	485	636	32.0%	72.3%	80.1%	49.3%	0.647
337214, Office Furniture (except Wood) Manufacturing	\$671	876	1,422	231	255	37.5%	79.1%	84.8%	61.6%	0.680
339112, Surgical and Medical Instrument Manufacturing	\$951	1,590	1,787	569	326	35.5%	73.6%	84.6%	89.0%	0.510
339113, Surgical Appliance and Supplies Manufacturing	\$761	1,541	2,859	567	886	47.8%	73.1%	76.3%	53.9%	0.842
339999, All Other Miscellaneous Manufacturing	\$777	1,304	2,725	458	391	45.6%	74.0%	87.5%	47.9%	0.409
423430, Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	\$921	1,477	5,014	535	804	59.1%	73.4%	86.2%	29.5%	0.443
423450, Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	\$1,577	2,432	4,470	949	812	31.4%	71.9%	84.6%	54.4%	0.466

Industry	Value of Contracts (\$million)	Number of Small Businesses		Number of Large Businesses		Small Business Percentages			Small Business Participation	
		FPDS	SAM	FPDS	SAM	Value*	FPDS	SAM	Par. Rate	Par. Ratio
423850, Service Establishment Equipment and Supplies Merchant Wholesalers	\$957	287	1,883	137	152	98.6%	67.7%	92.5%	15.2%	0.169
423940, Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers	\$2,434	53	227	2	18	83.0%	96.4%	92.7%	23.3%	2.101
423990, Other Miscellaneous Durable Goods Merchant Wholesalers	\$574	364	2,182	127	197	40.2%	74.1%	91.7%	16.7%	0.259
443120, Computer & Software Stores	\$2,110	787	9	250	19	43.1%	75.9%	32.1%	#	#
481211, Nonscheduled Chartered Passenger Air Transportation	\$1,736	372	747	46	76	28.9%	89.0%	90.8%	49.8%	0.823
481112, Scheduled Freight Air Transportation	\$731	30	408	40	117	28.2%	42.9%	77.7%	7.4%	0.215
511210, Software Publishers	\$1,315	2,152	5,699	1,035	1,290	32.6%	67.5%	81.5%	37.8%	0.471
518210, Data Processing, Hosting, and Related Services	\$1,175	791	7,549	473	1,396	40.7%	62.6%	84.4%	10.5%	0.309
541211, Offices of Certified Public Accountants	\$503	198	883	102	179	31.8%	66.0%	83.1%	22.4%	0.394
541511, Custom Computer Programming Services	\$5,678	3,007	18,930	859	3,734	38.9%	77.8%	83.5%	15.9%	0.691
541512, Computer Systems Design Services	\$11,485	2,036	19,287	591	3,841	27.8%	77.5%	83.4%	10.6%	0.686
541513, Computer Facilities Management Services	\$3,795	731	10,071	221	2,107	32.4%	76.8%	82.7%	7.3%	0.692
541519, Other Computer Related Services	\$11,314	3,257	16,805	969	2,962	47.6%	77.1%	85.0%	19.4%	0.592
541612, Human Resources Consulting Services	\$566	400	6,420	137	920	25.8%	74.5%	87.5%	6.2%	0.418
541620, Environmental Consulting Services	\$1,164	1,564	8,403	653	3,521	38.9%	70.5%	70.5%	18.6%	1.004
541690, Other Scientific and Technical Consulting Services	\$2,271	1,728	16,868	906	4,434	31.0%	65.6%	79.2%	10.2%	0.501
541810, Advertising Agencies	\$875	143	1,757	79	241	41.1%	64.4%	87.9%	8.1%	0.248

561110, Office Administrative Services	\$1,148	846	6,142	268	1,842	63.2%	75.9%	76.9%	13.8%	0.947
561320, Temporary Help Services	\$729	919	1,748	156	236	52.9%	85.5%	88.1%	52.6%	0.795
561621, Security Systems Services (except Locksmiths)	\$799	1,058	4,050	387	1,245	40.7%	73.2%	76.5%	26.1%	0.840
561720, Janitorial Services	\$1,552	2,404	6,223	510	975	46.7%	82.5%	86.5%	38.6%	0.739
562910, Remediation Services	\$4,590	995	6,380	249	1,830	38.1%	80.0%	77.7%	15.6%	1.146
611430, Professional and Management Development Training	\$1,777	1,852	10,312	809	2,727	25.5%	69.6%	79.1%	18.0%	0.605
611512, Flight Training	\$529	83	657	57	218	32.0%	59.3%	75.1%	12.6%	0.483
All	\$107,366	57,249	269,944	18,773	61,265	41.3%	75.3%	81.5%	21.2%	0.692
* Small Business Procurement Rate										
# Single-digit SAM data do not warrant a computation.										
Source: Microeconomic Applications, Inc., from FPDS-NG and System for Award Management data.										

industry is in the range of small-business procurement rates in Table 13 rather than the range in Table 12 or Table 14.

Table 14 shows large industries with small-business procurement rates over 25 percent. These industries also have a concentration in Manufacturing (31-33)—11 industries, including three in Navigational, Measuring, Electromedical, and Control Instruments Manufacturing (3345). Construction (23), which was not in Table 12 or Table 13, is represented by eight industries. Professional, Scientific, and Technical Services (541) has nine industries, including four industries in Computer Systems Design and Related Services (5415) and three in Management, Scientific, and Technical Consulting Services (5416).⁹¹

The measures of small-business participation in Table 14 have ranges similar to those in Table 13. Average small-business shares of contractors or SAM registrants are several percentage points higher in Table 14 than Table 13, and over two-thirds of participation ratios are above the all-industry average, compared to less than half in Table 13. The average small-business participation rate is lower in Table 14 than in Table 13. This is particularly true in Construction (23) and some Professional, Scientific, and Technical Services industries (541). Normally, a low participation rate would be interpreted as being due to low levels of contracting with small business. In most of these industries, however, the small-business procurement rates and small-business contractor shares are quite high, and low participation rates appear to reflect easy entry

⁹¹ There are also:

- Four industries in Wholesale Trade (42),
- Three industries in Administrative and Support Services (561), and
- Two industries in Air Transportation (484).

and very strong (excess) supply of small businesses rather than weak demand for small-business services.

The idea that participation rates are driven down by entry of many small businesses into the procurement market raises the question of how many small businesses—numbers, not percentages⁹²—actually do obtain contracts. Of the six construction industries in Table 14 with below-average small-business participation rates, for example, four have more than 1,000 small contractors, and one has more than 750 contractors. In Table 14 as a whole, a majority of industries have more than 1,000 small contractors. In Table 13, by contrast, fewer than one-third of the industries have more than 1,000 small contractors, and in Table 12 only 20 percent do. There are other contrasts among the three groups of industries:

- Industries with higher small-business procurement rates tend to have more small contractors;⁹³
- Industries with high small-business procurement rates are smaller markets, averaging less than two-thirds the procurement of industries with low or intermediate procurement rates.⁹⁴

The net effect appears to be that industries with low small-business procurement rates are much thinner contracting markets than industries with higher procurement rates. It may be an overstatement to speak of a “critical mass” of small contractors, but there seems likely to be a real difference in contracting dynamics in dealing with 152 active small contractors and 995.⁹⁵ With six times as many small contractors (and half the dollars to obligate), it seems probable that small businesses as a whole will be better known and their capabilities better understood.

⁹² Because of obvious differences related to size, one tends to normalize variables whenever possible by using percentages instead of absolute numbers.

⁹³ Although the variation among individual industries are considerable, for industries with over \$500 million in procurement:

- All industries with procurement rates under 10 percent average 467 contractors (the median is 152);
- All industries with procurement rates of 10 to 25 percent average 992 contractors (the median is 564);
- All industries with procurement rates over 25 percent average 1,218 contractors (the median is 995).

⁹⁴ Specifically:

- All industries with procurement rates under 10 percent average \$5.48 billion in procurement;
- All industries with procurement rates of 10 to 25 percent average \$5.24 billion in procurement;
- All industries with procurement rates over 25 percent average \$2.28 billion in procurement.

⁹⁵ Medians of procurement size classes; see Table 15.

Table 15 provides summary statistics— quartiles and means—for the performance measures and numbers of small contractors. Data are presented by class of procurement rate: Very Low (under 10 percent), Low/Intermediate (10 to 25 percent), and High (over 25 percent). Differences among these classes show distinct patterns for three types of variables: As one moves from Very Low to Low/Marginal to High, medians change by:

- Factors of 5 and 2.5, respectively, for procurement rates;
- Factors of a bit less than 4 and 2 for numbers of small businesses; and
- A few percentage points—often about 5, rarely more than 10—for all other measures of participation.

This pattern also applies to most changes of means and quartiles. The principal exception is that the first quartiles of participation measures for industries with very low procurement rates are much lower than the pattern suggests.

Table 15: Measures of Small-Business Participation in Industries With Over \$500 Million in Obligations, by Class of Small-Business Procurement Rates					
		Small-Business Participation Rate			
		Very Low	Low/Intermediate	High	All
Number of Industries		32	33	47	112
Small-Business Procurement Rate	Range	0.0 %–9.3 %	10.1 %–24.5 %	25.5 %–98.6 %	0.0%–98.6 %
	First Quartile	1.2 %	13.9 %	31.8 %	7.5 %
	Median	3.5 %	17.1 %	40.2 %	21.8 %
	Third Quartile	4.9 %	22.1 %	45.6 %	37.5 %
	Mean	3.8 %	17.1 %	41.3 %	17.6 %
Percent of Contractors that are Small Businesses	Range	0.0 %–84.1 %	42.4 %–87.7 %	42.9 %–96.4 %	0.0 %–96.4 %
	First Quartile	24.0 %	58.4 %	67.5 %	59.8 %
	Median	58.0 %	63.6 %	74.1 %	67.7 %
	Third Quartile	69.0 %	69.5 %	79.0 %	74.7 %
	Mean	57.9 %	65.4 %	75.3 %	69.1 %
Percent of SAM Registrants that are Small	Range	22.3 %–93.9 %	20.0 % –89.1 %	21.1 %–92.7 %	20.0 % –93.9 %
	First Quartile	62.3 %	72.4 %	77.7 %	72.6 %
	Median	72.8 %	76.6 %	81.8 %	77.7 %
	Third Quartile	77.1 %	81.6 %	85.0 %	82.7 %
	Mean	70.1 %	76.8 %	81.5 %	78.7 %
Small-Business Participation Rate ^{a,b}	Range	0.0 %–97.3 %	4.6 %–97.3 %	6.2 %–89.0 %	0.0 % –97.8 %
	First Quartile	11.7 %	15.4 %	13.8 %	11.7 %
	Median	22.8 %	24.4 %	20.1 %	23.2%
	Third Quartile	42.7 %	43.0 %	40.7 %	41.5 %
	Mean	31.3 %	22.5 %	21.2 %	22.7 %
Small-Business Participation Ratio	Range	0.00–1.678	0.243–1.088	0.169–2.101	0.000–2.101
	First Quartile	0.255	0.409	0.440	0.343
	Median	0.509	0.507	0.680	0.532

	Third Quartile	0.690	0.700	0.926	0.693
	Mean	0.586	0.571	0.692	0.606
Number of Small-Business Contractors	Range	0–3,294	75–5,325	30–4,278	0–5,325
	First Quartile	41	315	372	175
	Median	152	564	995	606
	Third Quartile	483	1,203	1,852	1,413
	Mean	467	992	1,218	937

^a Percent of SAM Registrants with Contracts

^b Excludes three Low/Marginal industries and three High industries for which FPDS and SAM data are clearly conflicting and result in impossibly high participation ratios (five of them over 1,000). Since the data anomaly affects both large and small businesses, the ratio of participation rates is virtually unaffected.

The various participation measures overlap too much, and their summary statistics vary far too little, to provide a general explanation of the differences in small-business procurement rates among the three groups of industries. Participation measures may be important (and consistent) for individual industries or for small groups of industries—like the very low-participation industries discussed above—but they do not appear to drive the overall distribution of small-business procurement rates. Similarly, the participation ratios overlap too much and vary too little to explain differences in the numbers of small contractors.

The small-business share of contractors in an industry is an important measure of the degree of small-business participation in an industry. The idea of small business being “underrepresented” is essentially defined in terms of this measure, and this is a significant equity issue. SAM registration rates, participation rates, and participation ratios collectively can provide diagnostic information as to why the small-business contractor share is low in a given industry. These measures of participation, however, do not provide a great deal of insight as to why small-business procurement rates differ so much both absolutely and relative to small-business contractor shares. This is roughly illustrated by comparing the Construction and Manufacturing sectors. Both have high small-business contractor shares, but most Construction industries also have high small-business procurement rates, while many Manufacturing industries have very low rates.

2. Concentration of Procurement Obligations

Procurement is industrially far more concentrated than one might suppose. To examine concentration of procurement, we have regrouped the 112 six-digit industries with the most procurement into three procurement size classes: over \$10 billion; \$1 to \$10 billion; and \$500

million to \$1 billion. Table 16 shows the distribution, by sector and procurement level, of the numbers and total obligations of these industries:

- The 13 industries with procurement over \$10 billion account for a majority (53.6 percent) of all procurement and have a collective small-business procurement rate of 15.3 percent;
- The 57 industries with procurement between \$1 billion and \$10 billion account for almost one-third (30.2 percent) of all procurement and have a collective small-business procurement rate of 19.3 percent;
- The 43 industries with procurement between \$500 million and \$1 billion account for 6.0 percent of all procurement and have a collective small-business procurement rate of 29.9 percent.

**Table 16:
Obligations and Number of Industries, by Sector, for Six-Digit Industries
With Over \$500 Million in Procurement**

Sector	< \$10 Billion		\$1–\$10 Billion		\$500 Million– \$1 Billion		All (> \$500 Million)	
	Number	\$Millions	Number	\$Millions	Number	\$Millions	Number	\$Millions
22, Utilities	-	-	1	\$1,043	-	-	1	\$1,043
23, Construction	1	\$21,569	4	\$9,324	3	\$2,172	8	\$33,065
31-33, Manufacturing	5	\$109,853	15	\$50,154	20	\$14,382	40	\$174,389
42, Wholesale Trade	-	-	6	\$16,851	3	\$2,451	9	\$19,302
44-45, Retail Trade	-	-	1	\$2,110	-	-	1	\$2,110
48-49, Transportation and Warehousing	-	-	4	\$13,266	2	\$1,556	6	\$14,822
51, Information	-	-	4	\$7,832	-	-	4	\$7,832
52, Finance and Insurance	1	\$11,278	-	-	1	\$829	2	\$12,107
54, Professional, Scientific, and Technical Services	5	\$106,689	10	\$30,045	3	\$1,945	18	\$138,679
56, Administrative and Support and Waste Management and Remediation Services	1	\$23,286	6	\$15,281	4	\$2,756	11	\$41,323
61, Educational Services	-	-	2	\$2,979	3	\$1,913	5	\$4,892
62, Health Care and Social Assistance	-	-	3	\$3,891	-	-	3	\$3,891
72, Accommodation and Food Services	-	-	1	\$1,009	-	-	1	\$1,009
81, Other Services (except Public Administration)	-	-	-	-	4	\$2,697	4	\$2,697
All	13	\$272,674	57	\$153,784	43	\$30,701	113	\$457,159

Source: Microeconomic Applications, Inc., from FPDS-NG data.

Table 17 shows the obligations, procurement rates, and small-business shares of contractors for industries with over \$10 billion in procurement. Five industries, which account for one-fifth (20.2 percent) of all federal procurement, have very low small-business procurement rates; four industries have high procurement rates (the highest of which is 47.6 percent); and four have low rates.

Table 17 also shows the average procurement revenue (obligations) in each industry for large and small contractors. Average procurement revenue reflects variation in the small-business procurement rate due to contract size and numbers of contracts awarded to individual contractors, as opposed to numbers or percentages of large and small contractors. Large contractors averaged at least \$10 million in all but two industries, while small contractors averaged over \$2.1 million in only two industries. For a given industry, the disparity can be represented as a ratio of average procurement revenue per large firm to average revenue per

Industry	Obligations (\$millions)			Small Business Procurement Rate	Number of Contractors		Obligations per Contractor (\$millions)		Revenue Ratio*
	Total	By Contractor Size			Large	Small	Large	Small	
		Large	Small						
336411, Aircraft Manufacturing	\$47,682	\$46,795	\$887	1.9%	278	622	\$168	\$1.43	118
54171, Research and Development in the Physical, Engineering, and Life Sciences#	\$39,710	\$32,290	\$7,420	18.7%	2,621	5,325	\$12	\$1.39	9
541330, Engineering Services	\$33,436	\$28,408	\$5,029	15.0%	2,217	3,808	\$13	\$1.32	10
561210, Facilities Support Services	\$23,286	\$20,272	\$3,014	12.9%	794	1,492	\$26	\$2.02	13
236220, Commercial and Institutional Building Construction	\$21,569	\$12,594	\$8,975	41.6%	1,249	4,278	\$10	\$2.10	5
324110, Petroleum Refineries	\$18,294	\$15,573	\$2,721	14.9%	173	302	\$90	\$9.01	10
336611, Ship Building and Repairing	\$17,146	\$15,875	\$1,271	7.4%	422	1,156	\$38	\$1.10	34
336413, Other Aircraft Parts and Auxiliary Equipment Manufacturing	\$13,746	\$12,596	\$1,150	8.4%	803	2,586	\$16	\$0.44	35
336414, Guided Missile and Space Vehicle Manufacturing	\$12,985	\$12,966	\$18	0.1%	80	25	\$162	\$0.73	221
541512, Computer Systems Design Services	\$11,485	\$8,294	\$3,190	27.8%	591	2,036	\$14	\$1.57	9
541519, Other Computer Related Services	\$11,314	\$5,923	\$5,391	47.6%	969	3,257	\$6	\$1.66	4
524114, Direct Health and Medical Insurance Carriers	\$11,278	\$11,234	\$44	0.4%	41	6	\$274	\$7.32	37

541611, Administrative Management and General Management Consulting Services	\$10,744	\$8,109	\$2,635	24.5%	1,448	3,198	\$6	\$0.82	7
All	\$272,674	\$230,929	\$41,744	15.3%	11,686	28,091	\$20	\$1.49	13
* Revenue Ratio = Average Revenue per Large Contractor) / (Average Revenue per Small Contractor). # This five-digit NAICS code is a combination of two six-digit industries that cannot be separated in FPDS data because of incorrect coding: <ul style="list-style-type: none"> • Research and Development in Biotechnology (541711) • Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology) (541712) Source: Microeconomic Applications, Inc., from FPDS-NG data.									

small firm. This ratio—the “revenue ratio”—varies greatly, but there is a distinctive pattern, which is shown in Table 18.

- Industries with very low small-business procurement rates have revenue ratios greater than 30; large firms have, on average, at least 30 times as much contracting revenue as small firms.

Industry	Small Business Procurement Rate Range	Small Business Procurement Rate	Revenue Ratio*
336414, Guided Missile and Space Vehicle Manufacturing	Very Low (Less than 10%)	0.1%	221
524114, Direct Health and Medical Insurance Carriers		0.4%	37
336411, Aircraft Manufacturing		1.9%	118
336611, Ship Building and Repairing		7.4%	34
336413, Other Aircraft Parts and Auxiliary Equipment Manufacturing		8.4%	35
561210, Facilities Support Services	Low to Intermediate (10% to 25%)	12.9%	13
324110, Petroleum Refineries		14.9%	10
All Industries		15.3%	13
541330, Engineering Services		15.0%	10
541611, Administrative Management and General Management Consulting Services		18.7%	9
54171, Research and Development in the Physical, Engineering, and Life Sciences	High to Very High (Over 25%)	24.5%	7
541512, Computer Systems Design Services		27.8%	9
236220, Commercial and Institutional Building Construction		41.6%	5
541519, Other Computer Related Services		47.6%	4
* Revenue Ratio = Average Revenue per Large Contractor) / (Average Revenue per Small Contractor). Source: Microeconomic Applications, Inc., from FPDS-NG data.			

- Most industries with low or intermediate small-business procurement rates (in the 10- to 25-percent range) have revenue ratios from about 10 to less than 15.⁹⁶
- Industries with high small-business procurement rates have revenue ratios of 9 or less.

As Table 19 shows, large-scale procurement from large businesses is a significant factor in low small-business procurement rates in industries where procurement is most concentrated.

Table 19 shows the distribution of procurement obligations between large and small contractors for industries with between \$1 billion and \$10 billion in procurement. The mix of small-business procurement rates is similar to that in larger industries: Just over one third—21—industries, which account for over one eighth (13.3 percent) of all federal procurement, have very low small-business procurement rates. Another 20 have high small-business procurement rates (with three over 50 percent). The remaining 16 industries have low or intermediate small-business procurement rates.

**Table 19:
Obligations and Firms, By Size, in Six-Digit Industries With \$1 Billion to \$10 Billion in Procurement**

Industry	Obligations (\$millions)			Small Business Procurement Rate	Number of Contractors		Obligations per Contractor (\$millions)		Revenue Ratio*
	Total	By Contractor Size			Large	Small	Large	Small	
		Large	Small						
334511, Search, Detection, Navigation, Guidance, Aeronautical & Nautical System and Instrument Manufacturing	\$9,881	\$9,376	\$505	5.1%	689	1,105	\$13.6	\$0.46	30
541990, All Other Professional, Scientific & Technical Services	\$9,793	\$8,929	\$864	8.8%	1,977	3,294	\$4.5	\$0.26	17
336992, Military Armored Vehicle, Tank, and Tank Component Manufacturing	\$6,532	\$6,303	\$229	3.5%	137	528	\$46.0	\$0.43	106
541511, Custom Computer Programming Services	\$5,678	\$3,467	\$2,212	38.9%	859	3,007	\$4.0	\$0.74	5
336412, Aircraft Engine and Engine Parts Manufacturing	\$5,421	\$5,278	\$143	2.6%	272	606	\$19.4	\$0.24	82
424210, Drugs and Druggists Sundries Merchant Wholesalers	\$5,335	\$5,253	\$82	1.5%	122	115	\$43.1	\$0.71	60
334220, Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	\$5,315	\$4,527	\$788	14.8%	622	1,416	\$7.3	\$0.56	13

⁹⁶ The one exception, Research and Development in the Physical, Engineering, and Life Sciences, reflects a data anomaly. Nearly half (45 percent) of total procurement in the six-digit industries (541711 and 541711) are reported as being in 541710, which does not exist. The data reported for the actual two six-digit industries do fit this pattern.

237990, Other Heavy and Civil Engineering Construction	\$4,753	\$2,686	\$2,067	43.5%	383	1,468	\$7.0	\$1.41	5
562910, Remediation Services	\$4,590	\$2,840	\$1,750	38.1%	249	995	\$11.4	\$1.76	6
488190, Other Support Activities for Air Transportation	\$4,492	\$4,303	\$189	4.2%	195	325	\$22.1	\$0.58	38
325412, Pharmaceutical Preparation Manufacturing	\$4,475	\$4,415	\$59	1.3%	266	271	\$16.6	\$0.22	76
561612, Security Guards and Patrol Services	\$4,223	\$3,335	\$889	21.0%	359	385	\$9.3	\$2.31	4
517110, Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	\$4,222	\$3,266	\$956	22.6%	576	424	\$5.7	\$2.25	3
541513, Computer Facilities Management Services	\$3,795	\$2,564	\$1,231	32.4%	221	731	\$11.6	\$1.68	7
483111, Port and Harbor Operations	\$3,534	\$2,684	\$850	24.1%	78	75	\$34.4	\$11.3	3
481212, Nonscheduled Chartered Freight Air Transportation	\$3,504	\$2,856	\$648	18.5%	35	190	\$81.6	\$3.41	24
424490, Other Grocery and Related Products Merchant Wholesalers	\$3,046	\$2,933	\$113	3.7%	84	152	\$34.9	\$0.74	47
334111, Electronic Computer Manufacturing	\$3,006	\$1,820	\$1,186	39.5%	355	979	\$5.1	\$1.21	4
332993, Ammunition (except Small Arms) Manufacturing	\$2,770	\$2,425	\$345	12.5%	84	118	\$28.9	\$2.93	10
424720, Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	\$2,586	\$2,393	\$194	7.5%	146	483	\$16.4	\$0.40	41
Industry	Obligations (\$millions)			Small Business Procurement Rate	Number of Contractors		Obligations per Contractor (\$millions)		Revenue Ratio*
	Total	By Contractor Size			Large	Small	Large	Small	
		Large	Small						
423940, Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers	\$2,434	\$413	\$2,021	83.0%	2	53	\$206	\$38.1	5
541690, Other Scientific and Technical Consulting Services	\$2,271	\$1,567	\$704	31.0%	906	1,728	\$1.7	\$0.41	4
334290, Other Communications Equipment Manufacturing	\$2,140	\$1,643	\$497	23.2%	437	1,203	\$3.8	\$0.41	9
443120, Computer and Software Stores	\$2,110	\$1,201	\$909	43.1%	250	787	\$4.8	\$1.15	4
336419, Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	\$2,087	\$2,037	\$49	2.4%	111	211	\$18.4	\$0.23	79
562211, Hazardous Waste Treatment and Disposal	\$2,028	\$1,927	\$102	5.0%	168	220	\$11.5	\$0.46	25
325414, Biological Product (except Diagnostic) Manufacturing	\$2,002	\$1,913	\$90	4.5%	107	148	\$17.9	\$0.61	29
424410, General Line Grocery Merchant Wholesalers	\$1,872	\$1,526	\$346	18.5%	177	394	\$8.6	\$0.88	10
334419, Other Electronic Component Manufacturing	\$1,790	\$1,622	\$167	9.3%	620	1,403	\$2.6	\$0.12	22
611430, Professional and Management Development	\$1,777	\$1,325	\$453	25.5%	809	1,852	\$1.6	\$0.24	7

Training									
541618, Other Management Consulting Services	\$1,776	\$1,482	\$294	16.6%	440	744	\$3.4	\$0.40	9
561990, All Other Support Services	\$1,739	\$1,506	\$233	13.4%	646	982	\$2.3	\$0.24	10
481211, Nonscheduled Chartered Passenger Air Transportation	\$1,736	\$1,234	\$502	28.9%	46	372	\$26.8	\$1.35	20
237310, Highway, Street, and Bridge Construction	\$1,727	\$727	\$1,000	57.9%	307	1,413	\$2.4	\$0.71	3
236210, Industrial Building Construction	\$1,619	\$917	\$701	43.3%	221	771	\$4.2	\$0.91	5
621111, Offices of Physicians (except Mental Health)	\$1,609	\$1,504	\$105	6.5%	680	1,659	\$2.2	\$0.15	14
423450, Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	\$1,577	\$1,083	\$495	31.4%	949	2,432	\$1.1	\$0.20	6
541614, Process, Physical Distribution, and Logistics Consulting Services	\$1,574	\$1,356	\$218	13.9%	223	314	\$6.1	\$0.69	9
561720, Janitorial Services	\$1,552	\$827	\$725	46.7%	510	2,404	\$1.6	\$0.30	5
541720, Research and Development in the Social Sciences and Humanities	\$1,490	\$1,352	\$138	9.3%	411	466	\$3.3	\$0.30	11
511210, Software Publishers	\$1,315	\$886	\$429	32.6%	1,035	2,152	\$0.9	\$0.20	4
333319, Other Commercial and Service Industry Machinery Manufacturing	\$1,309	\$999	\$309	23.6%	320	969	\$3.1	\$0.32	10
541310, Architectural Services	\$1,253	\$959	\$295	23.5%	643	824	\$1.5	\$0.36	4

Industry	Obligations (\$millions)			Small Business Procurement Rate	Number of Contractors		Obligations per Contractor (\$millions)		Revenue Ratio*
	Total	By Contractor Size			Large	Small	Large	Small	
		Large	Small						
541930, Translation and Interpretation Services	\$1,250	\$977	\$273	21.8%	199	564	\$4.9	\$0.48	10
332410, Power Boiler and Heat Exchanger Manufacturing	\$1,249	\$1,239	\$10	0.8%	49	145	\$25.3	\$0.07	363
238990, All Other Specialty Trade Contractors	\$1,225	\$713	\$511	41.7%	516	2,110	\$1.4	\$0.24	6
611519, Other Technical and Trade Schools	\$1,202	\$966	\$235	19.6%	155	175	\$6.2	\$1.35	5
518210, Data Processing, Hosting, and Related Services	\$1,175	\$696	\$478	40.7%	473	791	\$1.5	\$0.60	2
541620, Environmental Consulting Services	\$1,164	\$711	\$453	38.9%	653	1,564	\$1.1	\$0.29	4
621491, HMO Medical Centers	\$1,153	\$1,153	\$0	0.0%	30	0	\$38.4	-	-
561110, Office Administrative Services	\$1,148	\$423	\$725	63.2%	268	846	\$1.6	\$0.86	2
315999, Other Apparel Accessories and Other Apparel Manufacturing	\$1,134	\$623	\$512	45.1%	152	611	\$4.1	\$0.84	5
622110, General Medical and Surgical Hospitals	\$1,129	\$1,085	\$45	3.9%	1,342	9	\$0.8	\$4.95	0.2
517919, All Other Telecommunications	\$1,120	\$1,007	\$113	10.1%	309	315	\$3.3	\$0.36	9

336111, Automobile Manufacturing	\$1,043	\$1,029	\$14	1.4%	45	41	\$22.9	\$0.35	65
221122, Electric Power Distribution	\$1,043	\$991	\$52	4.9%	537	148	\$1.8	\$0.35	5
722310, Food Service Contractors	\$1,009	\$969	\$40	3.9%	630	34	\$1.5	\$1.17	1
All	\$153,785	\$124,241	\$29,544	19.2%	23,085	47,521	\$5.4	\$0.62	9
* Revenue Ratio = Average Revenue per Large Contractor / (Average Revenue per Small Contractor).									
Source: Microeconomic Applications, Inc., from FPDS-NG data.									

Table 19 also shows the average amount of procurement revenue in each industry for large and small contractors. Large contractors averaged at least \$5 million in about half of the industries, while small contractors averaged over \$1 million in about one-fifth of the industries. The revenue ratios of these industries (see Table 20) show the same relationship to the small-business procurement rate as found in larger industries.

**Table 20:
Comparison of Small-Business Procurement Rates and Revenue Ratios in
Six-Digit Industries With \$1 Billion to \$10 Billion in Procurement**

Industry	Small Business Procurement Rate Range	Small Business Procurement Rate	Revenue Ratio*	
332410, Power Boiler and Heat Exchanger Manufacturing	Very Low (Less than 10%)	0.8%	363	
325412, Pharmaceutical Preparation Manufacturing		1.3%	76	
336111, Automobile Manufacturing		1.4%	65	
424210, Drugs and Druggists Sundries Merchant Wholesalers		1.5%	60	
336419, Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing		2.4%	79	
336412, Aircraft Engine and Engine Parts Manufacturing		2.6%	82	
336992, Military Armored Vehicle, Tank, and Tank Component Manufacturing		3.5%	106	
424490, Other Grocery and Related Products Merchant Wholesalers		3.7%	47	
622110, General Medical and Surgical Hospitals		3.9%	0.2	
722310, Food Service Contractors		3.9%	1	
488190, Other Support Activities for Air Transportation		4.2%	38	
325414, Biological Product (except Diagnostic) Manufacturing		4.5%	29	
221122, Electric Power Distribution		4.9%	5	
562211, Hazardous Waste Treatment and Disposal		5.0%	25	
334511, Search, Detection, Navigation, Guidance, Aeronautical & Nautical System and Instrument Manufacturing		5.1%	30	
621111, Offices of Physicians (except Mental Health)		6.5%	14	
424720, Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)		7.5%	41	
541990, All Other Professional, Scientific & Technical Services		8.8%	17	
334419, Other Electronic Component Manufacturing		9.3%	22	
541720, Research and Development in the Social Sciences and Humanities		9.3%	11	
517919, All Other Telecommunications		Low to Intermediate (10% to 25%)	10.1%	9
332993, Ammunition (except Small Arms) Manufacturing			12.5%	10
561990, All Other Support Services			13.4%	10
541614, Process, Physical Distribution, and Logistics Consulting Services			13.9%	9
334220, Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing			14.8%	13
541618, Other Management Consulting Services	16.6%		9	
481212, Nonscheduled Chartered Freight Air Transportation	18.5%		24	
424410, General Line Grocery Merchant Wholesalers	18.5%		10	
All Industries	19.2%		9	
611519, Other Technical and Trade Schools	19.6%		5	
561612, Security Guards and Patrol Services	21.0%		4	
541930, Translation and Interpretation Services	21.8%		10	
517110, Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	22.6%		3	
334290, Other Communications Equipment Manufacturing	23.2%		9	
541310, Architectural Services	23.5%		4	
333319, Other Commercial and Service Industry Machinery Manufacturing	23.6%		10	
483111, Port and Harbor Operations	24.1%		3	

Industry	Small Business Procurement Rate Range	Small Business Procurement Rate	Revenue Ratio*
611430, Professional and Management Development Training	High to Very High (Over 25%)	25.5%	7
481211, Nonscheduled Chartered Passenger Air Transportation		28.9%	20
541690, Other Scientific and Technical Consulting Services		31.0%	4
423450, Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers		31.4%	6
541513, Computer Facilities Management Services		32.4%	7
511210, Software Publishers		32.6%	4
562910, Remediation Services		38.1%	6
541511, Custom Computer Programming Services		38.9%	5
541620, Environmental Consulting Services		38.9%	4
334111, Electronic Computer Manufacturing		39.5%	4
518210, Data Processing, Hosting, and Related Services		40.7%	2
238990, All Other Specialty Trade Contractors		41.7%	6
443120, Computer and Software Stores		43.1%	4
236210, Industrial Building Construction		43.3%	5
237990, Other Heavy and Civil Engineering Construction		43.5%	5
315999, Other Apparel Accessories and Other Apparel Manufacturing		45.1%	5
561720, Janitorial Services		46.7%	5
237310, Highway, Street, and Bridge Construction		57.9%	3
561110, Office Administrative Services		63.2%	2
423940, Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers		83.0%	5
NOTE: HMO Medical Centers (621491) is omitted; there are no small contractors, so that the Revenue Ratio is undefined. * Revenue Ratio = Average Revenue per Large Contractor / (Average Revenue per Small Contractor). Source: Microeconomic Applications, Inc., from FPDS-NG data.			

As is shown in Table 20:

- Most industries with very low small-business procurement rates have revenue ratios of 25 or more, although:
 - ◆ There are three clear outliers,⁹⁷ and
 - ◆ Some industries with small-business procurement rates above 5 percent have revenue ratios in the teens.
- With one exception, all industries with low to intermediate small-business procurement rates have revenue ratios below 15, and most have revenue ratios around or below 10.
- With one exception, all industries with high or very high procurement rates have revenue ratios below 7.

⁹⁷ These industries are:

- General Medical and Surgical Hospitals (622110),
- Electric Power Distribution (221122), and
- Food Service Contractors (722310).

The average revenue for a large contractor in these industries is quite low—under \$2 million—and in two of the industries revenues to small contractors exceed \$1 million. That is clearly an exception to the distinctive pattern.

**Table 21:
Obligations, Firms, and Revenue Ratios in Six-Digit Industries with
\$500 Million to \$1 Billion in Procurement**

Industry	Obligations (\$millions)			Small Business Procurement Rate	Number of Contractors		Obligations per Contractor (\$millions)		Revenue Ratio*
	Total	By Contractor Size			Large	Small	Large	Small	
		Large	Small						
336415, Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	\$977	\$973	\$4	0.4%	57	117	\$17.1	\$0.03	502
423850, Service Establishment Equipment and Supplies Merchant Wholesalers	\$957	\$13	\$943	98.6%	137	287	\$0.1	\$3.29	0.03
339112, Surgical and Medical Instrument Manufacturing	\$951	\$613	\$337	35.5%	569	1,590	\$1.1	\$0.21	5
334210, Telephone Apparatus Manufacturing	\$947	\$738	\$209	22.1%	250	422	\$3.0	\$0.50	6
311611, Animal (except Poultry) Slaughtering	\$941	\$661	\$280	29.7%	33	57	\$20.0	\$4.91	4
423430, Computer & Computer Peripheral Equipment and Software Merchant Wholesalers	\$921	\$377	\$544	59.1%	535	1,477	\$0.7	\$0.37	2
541810, Advertising Agencies	\$875	\$515	\$360	41.1%	79	143	\$6.5	\$2.52	3
336212, Truck Trailer Manufacturing	\$831	\$701	\$130	15.6%	55	230	\$12.7	\$0.56	23
522390, Other Activities Related to Credit Intermediation	\$829	\$819	\$10	1.2%	19	6	\$43.1	\$1.64	26
488510, Freight Transportation Arrangement	\$825	\$824	\$1	0.2%	67	54	\$12.3	\$0.02	517
811219, Other Electronic and Precision Equipment Repair and Maintenance	\$807	\$711	\$96	11.9%	968	1,549	\$0.7	\$0.06	12
238220, Plumbing, Heating, and Air-Conditioning Contractors	\$807	\$178	\$629	77.9%	566	2,565	\$0.3	\$0.25	1
561621, Security Systems Services (except Locksmiths)	\$799	\$474	\$325	40.7%	387	1,058	\$1.2	\$0.31	4
238210, Electrical Contractors and Other Wiring Installation Contractors	\$790	\$334	\$456	57.7%	645	2,424	\$0.5	\$0.19	3
339999, All Other Miscellaneous Manufacturing	\$777	\$423	354	45.6%	458	1,304	\$0.9	\$0.27	3
333120, Construction Machinery Manufacturing	\$770	\$668	\$101	13.2%	138	355	\$4.8	\$0.29	17
339113, Surgical Appliance and Supplies Manufacturing	\$761	\$397	\$364	47.8%	567	1,541	\$0.7	\$0.24	3
333314, Optical Instrument and Lens Manufacturing	\$754	\$633	\$120	15.9%	214	578	\$3.0	\$0.21	14
481112, Scheduled Freight Air Transportation	\$731	\$525	\$206	28.2%	40	30	\$13.1	\$6.88	2
561320, Temporary Help Services	\$729	\$344	385	52.9%	156	919	\$2.2	\$0.42	5
611710, Educational Support Services	\$724	\$585	\$139	19.3%	908	1,524	\$0.6	\$0.09	7
811213, Communication Equipment Repair and Maintenance	\$719	\$610	\$109	15.2%	383	612	\$1.6	\$0.18	9

Industry	Obligations (\$millions)			Small Business Procurement Rate	Number of Contractors		Obligations per Contractor (\$millions)		Revenue Ratio*
	Total	By Contractor Size			Large	Small	Large	Small	
		Large	Small						
334516, Analytical Laboratory Instrument Manufacturing	\$714	\$486	\$228	32.0%	606	1,493	\$0.8	\$0.15	5
334519, Other Measuring and Controlling Device Manufacturing	\$689	\$377	\$312	45.3%	479	1,374	\$0.8	\$0.23	3
311421, Fruit and Vegetable Canning	\$672	\$480	\$193	28.7%	25	48	\$19.2	\$4.02	5
337214, Office Furniture (except Wood) Manufacturing	\$671	\$420	\$251	37.5%	231	876	\$1.8	\$0.29	6
611310, Colleges, Universities, and Professional Schools	\$660	\$656	\$4	0.6%	936	143	\$0.7	\$0.03	25
561611, Investigation Services	\$641	\$573	\$68	10.6%	99	709	\$5.8	\$0.10	60
811310, Commercial and Industrial Machinery and Equipment Repair and Maintenance	\$635	\$484	\$150	23.7%	1,073	2,078	\$0.5	\$0.07	6
335999, All Other Miscellaneous Electrical Equipment and Component Manufacturing	\$627	\$427	201	32.0%	485	1,263	\$0.9	\$0.16	5
561499, All Other Business Support Services	\$587	\$484	\$103	17.6%	270	333	\$1.8	\$0.31	6
237110, Water and Sewer Line and Related Structures Construction	\$576	\$263	\$313	54.4%	223	849	\$1.2	\$0.37	3
423990, Other Miscellaneous Durable Goods Merchant Wholesalers	\$574	\$343	\$230	40.2%	127	364	\$2.7	\$0.63	4
334510, Electromedical and Electrotherapeutic Apparatus Manufacturing	\$573	\$503	\$70	12.3%	280	507	\$1.8	\$0.14	13
332313, Plate Work Manufacturing	\$572	\$548	\$24	4.2%	32	169	\$17.1	\$0.14	120
541612, Human Resources Consulting Services	\$566	\$420	\$146	25.8%	137	400	\$3.1	\$0.37	8
332995, Other Ordnance and Accessories Manufacturing	\$552	\$417	\$135	24.5%	159	631	\$2.6	\$0.21	12
311615, Poultry Processing	\$551	\$541	\$10	1.9%	28	26	\$19.3	\$0.40	49
315211, Men's and Boys' Cut and Sew Underwear and Nightwear Manufacturing	\$538	\$386	\$151	28.2%	86	165	\$4.5	\$0.92	5
811111, General Automotive Repair	\$535	\$516	\$19	3.5%	173	343	\$3.0	\$0.05	55
611512, Flight Training	\$529	\$359	\$169	32.0%	57	83	\$6.3	\$2.04	3
334517, Irradiation Apparatus Manufacturing	\$514	\$379	\$135	26.2%	70	104	\$7.3	\$1.29	6
541211, Offices of Certified Public Accountants	\$503	\$343	\$160	31.8%	102	198	\$3.4	\$0.81	4
All	\$30,187	\$21,142	\$9,039	29.9%	12,839	30,894	\$1.6	\$0.29	6

* Revenue Ratio = Average Revenue per Large Contractor / (Average Revenue per Small Contractor).

Source: Microeconomic Applications, Inc., from FPDS-NG data.

Table 21 shows procurement from large and small contractors for industries with \$500 million to \$1 billion in procurement. The mix of small-business procurement rates differs from the mix in larger industries: A substantial majority of the industries—25 of 43—have small-business procurement rates above 25 percent (with six over 50 percent). Only seven, which account for 1.0 percent of all federal procurement, have very low rates. The other 12 have low or intermediate procurement rates. The collective procurement rate is 29.9 percent.

The pattern found above— high small-business procurement rates associated with low revenue ratios; low rates with high revenue ratios; and intermediate rates with intermediate ratios—is particularly pronounced in these industries. Table 22 shows the following:

- All industries with very low small-business procurement rates have revenue ratios of at least 25, and three (of seven) are over 100.
- Most industries with low to intermediate small-business procurement rates have revenue ratios in the teens or lower; only one exceeds 25.

Industry	Small Business Procurement Rate Range	Small Business Procurement Rate	Revenue Ratio*
488510, Freight Transportation Arrangement	Very Low (Less than 10%)	0.2%	517
336415, Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing		0.4%	502
611310, Colleges, Universities, and Professional Schools		0.6%	25
522390, Other Activities Related to Credit Intermediation		1.2%	26
311615, Poultry Processing		1.9%	49
811111, General Automotive Repair		3.5%	55
332313, Plate Work Manufacturing		4.2%	120
561611, Investigation Services	Low to Intermediate (10% to 25%)	10.6%	60
811219, Other Electronic and Precision Equipment Repair and Maintenance		11.9%	12
334510, Electromedical and Electrotherapeutic Apparatus Manufacturing		12.3%	13
333120, Construction Machinery Manufacturing		13.2%	17
811213, Communication Equipment Repair and Maintenance		15.2%	9
336212, Truck Trailer Manufacturing		15.6%	23
333314, Optical Instrument and Lens Manufacturing		15.9%	14
561499, All Other Business Support Services		17.6%	6
611710, Educational Support Services		19.3%	7
334210, Telephone Apparatus Manufacturing		22.1%	6
811310, Commercial and Industrial Machinery and Equipment Repair and Maintenance		23.7%	6
332995, Other Ordnance and Accessories Manufacturing		24.5%	12

Industry	Small Business Procurement Rate Range	Small Business Procurement Rate	Revenue Ratio*	
541612, Human Resources Consulting Services	High to Very High (Over 25%)	25.8%	8	
334517, Irradiation Apparatus Manufacturing		26.2%	6	
481112, Scheduled Freight Air Transportation		28.2%	2	
315211, Men's and Boys' Cut and Sew Underwear and Nightwear Manufacturing		28.2%	5	
311421, Fruit and Vegetable Canning		28.7%	5	
311611, Animal (except Poultry) Slaughtering		29.7%	4	
All Industries		29.9%	6	
541211, Offices of Certified Public Accountants		31.8%	4	
334516, Analytical Laboratory Instrument Manufacturing		32.0%	5	
335999, All Other Miscellaneous Electrical Equipment and Component Manufacturing		32.0%	5	
611512, Flight Training		32.0%	3	
339112, Surgical and Medical Instrument Manufacturing		35.5%	5	
337214, Office Furniture (except Wood) Manufacturing		37.5%	6	
423990, Other Miscellaneous Durable Goods Merchant Wholesalers		40.2%	4	
561621, Security Systems Services (except Locksmiths)		40.7%	4	
541810, Advertising Agencies		41.1%	3	
334519, Other Measuring and Controlling Device Manufacturing		45.3%	3	
339999, All Other Miscellaneous Manufacturing		45.6%	3	
339113, Surgical Appliance and Supplies Manufacturing		47.8%	3	
561320, Temporary Help Services		52.9%	5	
237110, Water and Sewer Line and Related Structures Construction		54.4%	3	
238210, Electrical Contractors and Other Wiring Installation Contractors		57.7%	3	
423430, Computer & Computer Peripheral Equipment and Software Merchant Wholesalers		59.1%	2	
238220, Plumbing, Heating, and Air-Conditioning Contractors		77.9%	1	
423850, Service Establishment Equipment and Supplies Merchant Wholesalers		98.6%	0.03	
* Revenue Ratio = Average Revenue per Large Contractor) / (Average Revenue per Small Contractor). Source: Microeconomic Applications, Inc., from FPDS-NG data.				

- With one exception, all industries with high procurement rates have revenue ratios of 8 or less.

The high industry concentration of federal procurement has a number of different dimensions and implications:

- Just 70 six-digit industries (those shown in Table 17 and Table 19) account for 83.8 percent of all federal procurement.
- In the largest industries, procurement tends to be concentrated on large businesses, resulting in low small-business procurement rates. Compared to industries with \$500 million to \$1 billion in procurement, industries with over \$1 billion in procurement:

- ◆ Have substantially lower small-business procurement rates,⁹⁸ and
- ◆ Are more likely to have small-business procurement rates under 5 percent.⁹⁹
- Industries with over \$1 billion dollars in procurement and very low small-business procurement rates (below 10 percent) account for one-third (33.5 percent) of all federal procurement. Their composite small-business procurement rate is 3.8 percent.
- The small-business procurement rate and the revenue ratio are inversely related:

Revenue per contractor—specifically, the revenue ratio—explains variations of the small-business procurement rate relative to the small-business share of contractors. The conventional wisdom is that getting more contractors into an industry will drive up the small-business procurement rate. The world clearly works this way in many industries (as in Construction), and that model is generally the source of concern about “disparity” and one of the bases for small-business procurement programs. In the above analysis, however, we have found cases of persistent low small-business procurement rates in the face of relatively high small-business participation measures (many manufacturing industries being examples). Average revenue per contractor is the missing link between small-business shares of contractors and obligation dollars. Of industries with over \$500 million in procurement:

- All but three of the 24 industries with small-business procurement rates of 5 percent or less have revenue ratios of at least 25, and one-third of these have revenue ratios over 100;
- Only one of the 69 industries with small-business procurement rates over 10 percent has a revenue ratio over 25; 57 of these industries have revenue ratios of 10 or less.

The revenue ratio is a factor in its own right. It is not just a residual variable—a mathematical accommodation of an imbalance between small-business contractor shares and procurement goals. A revenue ratio reflects factors that strongly influence the small-business procurement rate. In this view, small-business procurement rates are low in some industries because something about procurement leads to making large—and/or multiple—contracts with a few¹⁰⁰ large contractors. A high revenue rate, however, does not indicate what those factors are.

⁹⁸ An average of 16.5 percent, compared with 29.9 percent.

⁹⁹ Over one-third (33.4 percent) of industries, compared with one in six (16.7 percent).

¹⁰⁰ One implication of this perspective is that many large contractors probably are left out along with small contractors. If it were just a matter of firm size, revenue ratios probably would be a good deal lower due to competition and entry by other large firms. This implication is consistent with the observed phenomenon of high

3. Observations

There is some tendency for small-business procurement rates to be positively associated with small-business contractor shares, participation rates, and availability. This is particularly noticeable among industries with similar small-business procurement rates. There also are some industries where a low small-business procurement rate is clearly the result of some combination of low availability, low participation rates, and/or low small-business contractor shares. Across the full range of small-business procurement rates, however, variations in these participation measures are too inconsistent and too small to account for the wide variations in small-business participation rates.

Large differences in small-business procurement rates—particularly very low small-business participation rates—are associated with differences in the concentration of procurement to a relatively few large contractors, as reflected in the revenue ratio. The data do not indicate whether this concentration is due to some aspects inherent in the procurement or to other factors—and the nature of the cause has significant implications for expanding small-business procurement. The data strongly suggest, however, that the most serious problem with small-business procurement is not a dearth of small businesses (or an excess of large ones).

The industries with the highest levels of procurement often are the industries where procurement is most heavily concentrated on large contractors and where the small-business procurement rate is very low. This concentration is a major factor in failure to meet procurement goals.

D. Recommendations

Procurement is highly concentrated by industry. Small-business procurement rates vary greatly. Shortfalls in small-business procurement are concentrated in a relatively small number of industries that account for a substantial majority of all procurement. Most of these industries with low or very low small-business procurement rates have high concentrations of procurement from a relatively small number of large businesses. Whether these concentrations are inherent in the procurement requirements or whether requirements are amenable to separation is a question for which six-digit data cannot provide an answer.

procurement ratios in industries with low small-business procurement rates. In such cases, the procurement ratio is high because relatively few large businesses (the denominator of the ratio) are contractors

Analytical resources should be focused strategically on better understanding the industrial combination of high procurement levels and low small-business procurement rates.

IV. SUBCONTRACTING

Highlights

The government-wide subcontracting rates for small businesses and all reported subclasses have declined over the last year or two of data, although the SDB and WOSB subcontracting rates remain above their national goals.

Industry data on small and subclass business subcontractors are not available.

A. Requirements

Subcontracting to federal prime contractors is an alternate way for small and subclass¹⁰¹ businesses to participate in federal procurement. Subcontracting lacks the advantages of a direct relationship with a federal agency, but it does offer a second chance where most of the prime contract procurement is from large businesses.

Subcontracting Plans. Congress established subcontracting requirements at the same time it authorized agencies to set their own prime contracting goals for small and subclass businesses.¹⁰² Since acquisition staff does not have control over subcontracting, a mechanism other than agency goals was used. Prime contractors¹⁰³ are required to develop and submit a subcontracting plan for any contract exceeding \$500,000 (\$1,000,000 for construction of a public facility) that offers subcontracting possibilities. Specific provisions include the following:

- The policy goal is for small and subclass businesses to have the maximum practicable opportunity to participate in the performance of . . . subcontracts.”
- Each contract to which the subcontracting plan applies must contain a clause stating the policy and requirements, including “The contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with the efficient performance of this contract.”

¹⁰¹ For purposes of subcontracting data, 8(a) businesses are included under SDBs and not broken out into a separate class.

¹⁰² Public Law 95-507 (Amendments to the Small Business Investment Act of 1978), § 211. (15 U.S. Code § 637(d))

¹⁰³ Small businesses are exempt from these requirements.

- Prior to the award of any contract to which the requirement applies, “the apparent successful offeror shall negotiate with the procurement authority a subcontracting plan which incorporates the [prescribed] information.”
- The subcontracting plan must include:
 - ◆ Separate percentage goals for the utilization as subcontractors of small businesses and each subclass of small businesses and
 - ◆ A description of efforts the contractor will take to assure that small and subclass businesses “will have an equitable opportunity to compete for subcontracts.”
- “Significant factors for purposes of evaluating offers for a bundled contract [with] a significant opportunity for subcontracting” include:
 - ◆ “A factor . . . based on the rate provided under the subcontracting plan for small business participation in the performance of the contract” and
 - ◆ “A factor . . . based on the extent to which the offeror attained applicable goals for small business participation in the performance of [past] contracts.”
- Contractor must report data on the extent to which subcontracting goals and objectives are met.
- The agency must “periodically” review the reported data “for the purpose of ensuring that such contractors comply in good faith with the [subcontracting] requirements.”
- “The failure of any contractor or subcontractor to comply in good faith with [the requirements or with] any [subcontracting] plan . . . included in its contract or subcontract . . . shall be a material breach of such contract or subcontract and may be considered in any past performance evaluation of the contractor.”

Reporting of Subcontracting. Reporting on subcontracting provides the basic information required by statute. Quantitative data include the total value of subcontracts and the shares of subcontracts of large businesses, small businesses, and each small-business subclass. Other data provide information on the contractor, the agency, and the contract. Two reporting formats have been developed:

- An Individual Subcontract Report (ISR) is filed for each contract that requires a subcontracting plan. It includes data both on the subcontracting goals and on actual cumulative subcontracting since the inception of the contract.

- A Summary Subcontract Report (SSR) is filed by each business with one or more subcontracting plans. It includes aggregated cumulative data for the fiscal year on all covered contracts.¹⁰⁴

An electronic Subcontracting Reporting System (eSRS) was implemented in 2007 to replace paper forms.

Subcontractors with subcontracts that exceed the thresholds are also required to file subcontractor reports. The prime contractor and each tier of subcontractor report only on the filer’s own subcontracts. This system prevents double-counting lower-tier subcontracts.

Observations. While government-wide subcontracting goals exist, there is no effort to quantify “maximum practicable opportunity.” As opportunities may vary greatly, such flexibility is appropriate. Nevertheless, the flexibility leaves the numbers in a subcontracting plan open to negotiation, and (if goals are not met) it makes it difficult to assess the good faith of the efforts to reach those numbers. The consequences of not meeting a subcontracting plan’s goals are similarly vague. It is a “significant factor,” and the statute includes it only for evaluation of offers for a bundled contract.

B. Reported Results

Aggregate Results. The SBA compiles subcontracting data by agency and uses the results as part of the Small Business Performance Scorecards. The results at the government-wide level are shown in Table 23. The percentages of subcontracts with small businesses as a whole and with all subclasses that have goals rose through FY2010. By FY2012, however, all of the percentages had fallen.

Year	All Small	SDB	WOSB	SDVOSB	HUBZone
FY2012	33.6%	5.1%	5.6%	1.8%	1.3%
FY2011	35.0%	5.4%	6.1%	2.1%	1.9%
FY2010	35.4%	5.3%	6.2%	1.7%	2.0%
FY2009	31.8%	4.5%	5.4%	1.3%	1.7%
FY2008	28.7%	3.9%	4.9%	0.9%	1.5%
Goal	35.9% ^a	5.0%	5.0%	3.0%	3.0%

^a Raised to 36.0% in 2012.
Source: SBA Government-Wide Small Business Performance Scorecards for FY2009–FY2012.

¹⁰⁴ Data for commercial subcontracting plans are included only in the SSR.

The subcontracting goals for SDBs and WOSBs are being met. The goals for small business as a whole, SDVOBs, and HUBZone businesses are not being met. The subcontracting goal for all small businesses was incrementally raised as performance began to approach the goal—an unusual development.

Results by Industry. The NAICS code of a contract was included in the design of eSRS. This field has not been used in the ISRs, however. A Product/Service Code is used instead, and this is not comparable to NAICS data. There are NAICS codes in the SSR, but these apply to the filing business, not the contracts.

The eSRS does not provide the industry data on small and subclass subcontractors that are necessary for “a description of the industrial composition” of these business concerns.

C. Recommendations

Data

Industry data on small and subclass business subcontractors are not available.

If an industry analysis of small and subclass business subcontractors is wanted, the data must be collected. This may require legislation.

V. BARRIERS TO SMALL-BUSINESS PROCUREMENT

Highlights

The largest gaps between procurement rates and goals—the largest barriers to small business—are found in industries with the most procurement dollars going to a relatively small number of large businesses—often despite average small-business contractor shares.

Six-digit industry data can provide a general picture of availability of small businesses, but they do not provide answers to questions about the availability of capabilities required by agencies or about the potential for increasing a low small-business procurement rate.

Market research on specific capabilities is key to expanding small-business procurement, but its practice is uneven. Inadequate market research is a barrier to small business.

For small-business procurement to succeed, it must be an ongoing and visible priority of acquisition staff at different levels. Lack of focus by management and a dearth of incentives are both types of barriers.

Procurement policy and practices differ in their impact on small-business procurement. Their purpose, design, and implementation determine the type of incentives they provide and whether they become a boost or a barrier to small business.

Anti-bundling regulations defend against further consolidation of requirements that tend to lower the small-business procurement rate. Raising the small-business procurement rate requires unbundling of already consolidated requirements. A lack of offense is a barrier.

Offices of Small and Disadvantaged Business Utilization (OSDBUs) and SBA Procurement Center Representatives (PCRs) can advocate for small businesses in real time as part of the procurement process. PCRs are the only independent (non-agency) agents with this role. Much more lead time than regulations require is needed to do this effectively. The fact that PCRs are spread very thin is a barrier.

A major finding of this study is that in industries where small-business procurement rates are very low, revenues per large business—not just the large-business share of procurement—tend to be quite high. Contracting dollars are very concentrated. This finding is a lens through which to examine barriers to small-business procurement.

A. Availability and Utilization of Small Business

1. A Note on Disparity

Disparity refers to utilization relative to availability. Counting small-business contractors as a percentage of available small businesses provides a measure of utilization, or representation, that is conveniently comparable across industries. Such disparity measures are required to meet evidentiary requirements of the courts to demonstrate disparities in contracting with woman-owned businesses and SDBs (presumably the residue of past discrimination). The program under review must also be demonstrated to be narrowly targeted toward those disparities.

The courts' requirements may support use of broader data—specifically, Census data on the economy as a whole.¹⁰⁵ The rationale is that discrimination may have been or may be a factor in inhibiting entry by WOSBs and SDBs into the government market. Under this rationale, the usual concept of “willing and able” as reflected in SAM data may be too limited.

A disparity study needs to produce a single number that can be compared across industries and used to determine whether an industry is over or under a threshold. We have found the utilization process to have more facets than that. Industries where there are not disparities in numbers of contractors can still have very low small-business procurement rates. Conversely, apparent disparity in numbers of contractors may not translate into low small-business procurement rates if small contractors have relatively large contracts.

2. Interaction of Availability and Utilization

Small-business procurement programs and goals began with the premise that small-businesses are underutilized—that, as reflected in procurement dollars, available small businesses are far below their potential as contractors. Industry analysis of procurement is intended to identify where this untapped potential exists. This is an issue distinct from disparity

¹⁰⁵ Census data also allow a comparison on the basis of revenue—contract revenues and overall revenues of small businesses—as well as numbers of businesses. SAM lacks the necessary revenue data.

analysis, which focuses on utilization as the decisive factor. The issues of availability and utilization are not as simple as they might seem because there are several aspects (or stages) of availability of small businesses in an industry:

- How many small businesses are in the economy-wide industry marketplace?
- How many small businesses are willing and able to be contractors?
- How many willing-and-able small businesses are receiving contracts?
- Are small contractors receiving procurement dollars commensurate with their capabilities?

Availability beyond the first stage depends on both availability of small businesses at the previous stage and on utilization (or participation) of small businesses available at the previous stage.

Availability at the economy-wide level is the least useful measure for policy purposes. For a variety of reasons, many small businesses are not interested in government contracting. In any practical sense, they are not available for contracting even if they are out there.

Availability of small businesses at the SAM registration level is not consistently related to the small-business procurement rate (or the small-business contractor share) of an industry. Industries with low to very low small-business procurement rates tend to have somewhat low SAM registration rates, but differences are too small and erratic to support the idea that availability is a major constraint. There are cases of classic underutilization, in the sense that SAM registration rates are about or above average, contract participation rates of small businesses are low (generally both absolutely and relative to large businesses), small-business shares of contractors are low, and small-business procurement rates are low.¹⁰⁶ On the other hand, there are also industries with only slightly higher SAM registration rates, relatively low

¹⁰⁶ Significant examples include:

- Wired Telecommunications Carriers (517919)
- Engineering Services (541330)
- Process, Physical Distribution, and Logistics Consulting Services (541614),
- Other Management Consulting Services (541618)
- Facilities Support Services (561210)
- All Other Support Services (561990)
- Other Technical and Trade Schools (611519)

participation rates,¹⁰⁷ high small-business procurement rates, and generally high small-business contractor shares. In the bigger picture, the concepts of availability and utilization of small businesses are complicated by the fact that, in determining the small-business share of contractors, low participation rates may offset high registration (underutilization), but high participation rates also may offset relatively low availability. While utilization or availability of small businesses may be the critical issue in individual industries, the concepts are less useful for describing barriers to small-business procurement in general.

As the analysis showed, the most serious underutilization of small businesses occurs not so much in the failing to award contracts to numerous small businesses as in the relatively low levels of dollars awarded to small businesses that have become contractors. This is illustrated by the 13 six-digit industries with over \$10 billion in procurement. Compared with the industry-wide average contractor share of small businesses (67 percent):

- Three of the five industries (the three largest) with small-business procurement rates under 8.5 percent have small-business shares of contractors above average.¹⁰⁸
- All five industries with small-business procurement rates between 12 percent and 25 percent have small-business shares of contractors above, or within three percentage points of, average.¹⁰⁹
- The three industries with small-business procurement rates above 27.5 percent have small-business shares of contractors about 10 percentage points above average.¹¹⁰

¹⁰⁷ Absolute participation rates may be low, but participation ratios (small-business participation rate to large-business participation rate) often are average or above. It appears that one factor is that the attractiveness of the industries draws large numbers of small businesses to register in SAM.

¹⁰⁸ These industries are:

- Aircraft Manufacturing (336411)
- Other Aircraft Parts and Auxiliary Equipment Manufacturing (336413)
- Ship Building and Repairing (336611).

The exceptions, with small-business contractors under 25 percent that could be attributed either to low availability (SAM registration rates of 60 percent or less) or low utilization (participation rates under 6.5 percent) are:

- Guided Missile and Space Vehicle Manufacturing (336414)
- Direct Health and Medical Insurance Carriers (524114)

¹⁰⁹ These industries are:

- Petroleum Refineries (324110)
- Engineering Services (541330)
- Administrative Management and General Management Consulting Services (541611)
- Research and Development in the Physical, Engineering, and Life Sciences (541710)
- Facilities Support Services (561210)

¹¹⁰ These industries are:

- Commercial and Institutional Building Construction (236220)

The eight industries with small-business procurement rates under 25 percent and roughly average small-business contractor rates account for \$204 billion in procurement—over 40 percent. The elephant in many rooms is the relatively small numbers of dollars awarded per small contractor, not the relatively small number of small contractors.

3. Capabilities of Small Businesses

Establishing availability of small businesses at the industry level does not address the issue of their capabilities. Industry analysis provides a great deal of information, but a lot of it confirms what is generally known.¹¹¹ The default justification of contracting officers for making awards to large businesses is that there are no small businesses (or, at least, not two) that can do the job. Analysis of six-digit industry data by itself is not very useful for dealing with this often-heard claim. Six-digit industry data often fail to catch significant distinctions.

Ship Building and Repairing (336611) provides an example. The NAICS definition describes the sort of large-scale facility that one associates with the term “shipyard.”¹¹² An industry profile for a regulatory flexibility analysis of an OSHA lead standard¹¹³ provided more detail. The industry is subdivided by whether shipyards have dry docks, by whether the shipyard builds or only repairs ships,¹¹⁴ by “tier,”¹¹⁵ as “major” or not,¹¹⁶ and (quite important for a lead

-
- Computer Systems Design Services (541512)
 - Other Computer Related Services (541519)

¹¹¹ It comes as no particular surprise, for example, that 82.2 percent of SAM registrants and 81.0 percent of contractors in Specialty Trade Contractors (238) are small businesses, and that the small-business procurement rate is 60.5 percent. In Direct Health and Medical Insurance Carriers (524114) the surprise is that as many as half (50.2 percent) of SAM registrants are small. The participation rate of small businesses is 5.5 percent, the share of contractors is 12.8 percent, and the small-business procurement rate is 0.4 percent. This may not be a correctable disparity because large size can be essential to pooling risk.

¹¹² “This U.S. industry comprises establishments primarily engaged in operating a shipyard. Shipyards are fixed facilities with drydocks and fabrication equipment capable of building a ship, defined as watercraft typically suitable or intended for other than personal or recreational use. Activities of shipyards include the construction of ships, their repair, conversion and alteration, the production of prefabricated ship and barge sections, and specialized services, such as ship scaling.”

¹¹³ Marthe Kent, Robert Perry, and Henry Beale, *Results of Data Gathering for an Assessment of the Feasibility of Compliance with the Lead Standard in the Shipbuilding and Repair Industry*. Report to the Occupational Safety and Health Administration, 1987, pp. 36–51.

¹¹⁴ A shipbuilding yard must have an inclined way, a side-launching platform, or a building basin.

¹¹⁵ The distinction is the kind of vessels built:

- First-tier yards (about 20 percent of businesses) build and repair ocean-going vessels.
- Second-tier yards (about one third of all businesses) build and repair only inland and coastal vessels.
- Third-tier yards are very small (generally fewer than 20 employees) and may be off-site.

¹¹⁶ “Major” is defined by the length of ship (at least 400 feet) built or repaired. At the time, 28 first-tier yards were major shipbuilders, and 30 first-tier yards were major topside (in the water rather than in dry dock) repair yards.

standard) whether they build and repair atomic-powered ships.¹¹⁷ In practice, the distinctions are somewhat blurred because the yards with the highest capabilities also do other kinds of work (e.g., major shipbuilding yards also repair ships and build smaller ships). The Navy is a mainstay of major shipyards. Whether requirements related to the size and atomic power of Navy ships fully account for the very low (7.4 percent) small-business procurement rate, and how much additional procurement potential for small businesses there is, are questions that six-digit industry data cannot answer.

Industry data provide a useful perspective that is distinct from agency data. Data can be suggestive. In an effort to increase small-business procurement, small-business participation rates and procurement rates are good places to start. If there are 3,808 small contractors in an industry,¹¹⁸ for example, it is not plausible (pending details) to claim that there are not small businesses capable of performing a contract—but there also is no guarantee that there are any with just the right capabilities. Industry data such as these are no substitute for market research.

4. Market Research

Industry data provide a useful overview and starting point, but there are important intra-industry differences that go beyond the six-digit level of detail. What capabilities small businesses have is more important than the numbers, and where opportunities lie is more critical than what the small-business procurement rate is. Good market research is essential to determine whether and where small-business capabilities match procurement requirements. This is true for all industries, but the need is particularly evident in industries with high concentrations of procurement from relatively large firms because the issue is how to break off pieces of large contracts.

Market research is not just a matter of finding small businesses that can perform a contract. Market research includes learning the capabilities of small businesses earlier—in the procurement planning process. It is entirely possible to draft a scope of work in such a way that good market research will show no small business, whose capabilities fit. The strategic aspect of market research is to develop scopes of work that match existing capabilities, rather than wait until after the final draft to see if a match can be found. Looking at the technical package well

¹¹⁷ At the time, two shipyards had this capability.

¹¹⁸ Engineering Services (541330), which has a small-business procurement rate of 15.0 percent.

before the solicitation is a function of the Procurement Center Representative, about whom more will be said later.

Inadequate market research is a major barrier to small-business procurement.

B. Priorities and Incentives

To be effective, small-business procurement must be an agency priority. Managers must not only communicate small-business priorities,¹¹⁹ the priority must be emphasized on an ongoing basis. It needs to be demonstrated—acted on—not just articulated. As an example, the small-business procurement program at the Treasury, which earned an A+ on its SBA Scorecard, includes:

- Relevant goals in performance plans for acquisition employees at all levels;
- Review of small-business goals during every quarterly performance meeting with senior staff of each bureau;
- Monthly meetings of senior procurement staff on the topic; and
- Weekly progress reports to each acquisition office.¹²⁰

The history of small-business procurement is replete with examples of congressional intent being incompletely implemented. Lack of incentives (or consequences) appears to be a significant factor. The failure of initial authorization of agency goals to produce the desired results is an example; authorization carries no incentive. Goals, when applied to agencies, are (appropriately) flexible, but flexibility can undermine incentives. Some managers are enthusiastic about small-business procurement,¹²¹ but reliance on individuals' motivation is not

¹¹⁹ Congress's most recent directive on priority for small-business procurement was:

(i) Each procurement employee or program manager described in clause (ii) shall communicate to the subordinates of the procurement employee or program manager the importance of achieving goals established under subparagraph (A).

(ii) A procurement employee or program manager described in this clause is a senior procurement executive, senior program manager, or Director of Small and Disadvantaged Business Utilization of a Federal agency having contracting authority.

(Public Law 112–239, § 1631(b)(3)(F))

¹²⁰ Matthew Weigelt, *Do Small-Business Preferences Make the Grade?* FCW.COM, September 15, 2012, pp. 37–38.

¹²¹ On an excellent Federal Acquisition Institute video, the Director of the IRS Office of Procurement told how to make small-business procurement work:

- Have support from the top.
- Inspire and motivate the team about why we are doing this.
- Focus on small-business procurement on a daily basis.
- Care about, listen to, and empower your staff.
- Take a good look at forecasting: What is coming down the line?

sufficient. Acquisition staff, who must make the effort to do market research and other tasks associated with small-business procurement, need incentives and a sense of reward to do so. Small-business procurement must compete with other priorities and job requirements, and resources are limited.¹²²

C. Concentration of Contracting Dollars

1. Procurement Policy and Practices

Procurement rules create incentives that can facilitate or discourage small-business procurement. Policies and their administration can be a barrier. Several instances illustrate the issues.

The Federal Acquisition Streamlining Act of 1994 (FASA). The objective of the Act was to simplify the procurement process and reduce the transaction costs to the government. Two strategies in particular had implications for—and opposite impacts on—small-business procurement:

- The threshold for simplified acquisition procedures was raised from \$25,000 to \$100,000.
- The Act “establish[ed] a preference for awarding, to the maximum extent practicable, multiple task or delivery order contracts for the same or similar services or property.”¹²³

Raising the simplified acquisition-procedures threshold advanced both the priority of procurement streamlining and the priority of small-business procurement. This change substantially reduced the effort required for small-scale procurement, which had a strong (and intentional) incentive effect. The change also greatly expanded horizons for small business.

-
- Find appropriate small businesses and reach out to them.
 - Celebrate every success.

In addition to outlining these mechanics, the video demonstrated the right management approach. The Director’s enthusiasm and sense of excitement were palpable and had an impact that print alone cannot achieve. (Federal Acquisition Institute. *Big for Small Business*, Monday August 06, 2012, <http://www.fai.gov/drupal/training/fai-video-library#DETAIL>)

¹²² The summary of a biennial survey of acquisition and oversight officials reported that the acquisition workforce—“having the right number of competent, trained acquisition personnel”—was a top concern of the respondents. “The survey showed widespread concern that their workload has outstripped the acquisition workforce’s ability to deliver what is required.” Looking at trends over the last decade, the survey report noted that “maintaining a workforce at the right size, with the right experience to meet complex mission needs continues to fall short.” (Professional Services Council and Grant Thornton, *The Balancing Act: Acquisition in an Unabated Crisis*, Acquisition Policy Survey, December 2012, pp. 5, 7, 12.)

¹²³ Public Law 103-355 § 1004.

Indefinite Delivery Vehicles (IDVs), on the other hand, achieve their efficiencies substantially by pulling opportunities out of the range of small business. IDVs generally require a larger scale, a more complex mix of capabilities, and less competition than single contracts.¹²⁴ FASA had the desired effect on the mix of contracts,¹²⁵ but impacts on small-business procurement were considerable.¹²⁶ There is an inherent tension between efficiencies of consolidating contracts (or bundling) and small-business procurement. This tension was articulated by OFPP:

Increased demands to make the acquisition process quicker and less complex coupled with reductions in the overall acquisition workforce have driven acquisition managers to bundle requirements. To meet these demands and increase customer satisfaction, agencies have increasingly consolidated contractual requirements into larger contracts.

We [cannot] pursue operational efficiency at the expense of reducing small-business opportunities.¹²⁷

Bundling. In broad terms, bundling is the combining of two (or more) separable requirements into one contract. The statutory definition¹²⁸ is narrower and more specific. It focuses on the act of combining existing separate contract requirements in a new contract.

¹²⁴ An Acting Director at GAO's acquisition and sourcing management office recently described the IDV process: When agencies had a need for specific goods or services, they would then compete that contract among the contract holders who had been awarded the multiple-award contract. Agencies didn't have to go out and re-compete the entire requirement among the entire pool of potential contractors that are out in the private sector, but to limit it to the contract holders of the multiple-award contract. . . . The use of the multiple-award contract has grown significantly since FASA was passed, and it is one of the predominant forms of contracting that we see in the government today.

(Tim DiNapoli. Quoted in Michael O'Connell, *Federal Acquisition Streamlining Act (1994)*, Federal News Radio, 6/8/2012, <http://www.federalnewsradio.com/962/2895550/Federal-Acquisition-Streamlining-Act-1994>.)

¹²⁵ In the half dozen years after its passage,

- The share of contracts that were bundled rose from 12.2 percent to 16.4 percent, and
- The share of contract dollars in bundled contracts rose from 41.4 percent to 51.2 percent.

(Eagle Eye Publishers, *The Impact of Contract Bundling on Small Business FY 1992–FY 2001*, Report to the Small Business Administration Office of Advocacy, October 2002, p. 29.)

NOTE: Eagle Eye used a definition of “bundled” that was more inclusive than the legal definition (discussed below) and could reasonably be read as “consolidated.”

¹²⁶ In 2001:

- The small-business procurement rate in bundled contracts was 16.7 percent;
- The small-business procurement rate in non-bundled contracts was 23.3 percent; and
- The overall small-business procurement rate was 20.0 percent.

(*Ibid.*, p. 36.)

¹²⁷ Office of Federal Procurement Policy, *Contract Bundling: A Strategy for Increasing Federal Contracting Opportunities for Small Business*, October 2002, pp. 1, 3.

Congress specifically addressed the issue of bundling a few years after passage of FASA. Congress stopped short of prohibiting bundling, requiring instead that each Federal agency, to the maximum extent practicable, shall . . . avoid unnecessary and unjustified bundling of contract requirements that precludes small-business participation in procurements as prime contractors.¹²⁹

The requirements for justifying and proving the necessity of bundling are extensive (see Appendix N). They include cost parameters for justification, procedural requirements such as market research, and written reporting. The language includes explicit directives to foster small-business participation, and the statute erects substantial barriers against bundling.

The scope of unbundling requirements is limited to previously separated requirements. Consolidation is exempt if consolidated requirements are new (not previously provided under a government contract), are “radically different” from previously performed work, or were previously performed under one contract.¹³⁰ Previously consolidated requirements are, in effect, grandfathered. The requirements are something of a defensive, rear-guard action against new consolidation of contracts that prevent shrinkage in the small-business procurement rate rather than expand it. Failure to go on offense to recover lost ground is—over time—a barrier to small-business procurement.

¹²⁸ “Contract bundling—(1) Definitions—

(i) *Bundled requirement or bundling.* The term *bundled requirement* or *bundling* refers to the consolidation of two or more procurement requirements for goods or services previously provided or performed under separate smaller contracts into a solicitation of offers for a single contract that is likely to be unsuitable for award to a small business concern due to:

- (A) The diversity, size, or specialized nature of the elements of the performance specified;
- (B) The aggregate dollar value of the anticipated award;
- (C) The geographical dispersion of the contract performance sites; or
- (D) Any combination of the factors described in paragraphs (d)(1)(i) (A), (B), and (C) of this section.

(ii) *Separate smaller contract.* A separate smaller contract is a contract that has previously been performed by one or more small business concerns or was suitable for award to one or more small business concerns.

(iii) Single contract, as used in this definition, includes:

- (A) Multiple awards of indefinite quantity contracts under a single solicitation for the same or similar supplies or services to two or more sources; and
- (B) An order placed against an indefinite quantity contract under a Federal Supply Schedule contract or a task or delivery order contract awarded by another agency (*i.e.*, Government-wide acquisition contract or multi-agency contract).

(iv) Substantial bundling means any bundling that meets the dollar amounts specified in paragraph (b)(2)(i) of this section.” (13 CFR 125.2(d)(1))

¹²⁹ Public Law 105-135, §411, Small Business Reauthorization Act of 1997.

¹³⁰ Manuel, Kate M. *Contract “Bundling” Under the Small Business Act: Existing Law and Proposed Amendments*, Congressional Research Service Report for Congress R41133, June 11, 2012, p. 3.

Small Business Jobs Act of 2010. Congress addressed the adverse impacts of consolidated contracts on small business by expanding the scope of small-business set-asides to apply to multiple award contracts. Federal agencies were authorized to:

- “set aside part or parts of a multiple award contract for small business concerns,”
- “set aside orders placed against multiple award contracts for small business concerns,” and
- “reserve 1 or more contract awards for small business concerns under full and open multiple award procurements.”¹³¹

These changes in the acquisition incentive structure make it easier to contract with small business while maintaining operational efficiency.

Federal Strategic Sourcing Initiative (FSSI). Strategic sourcing is not so much a process conducted according to regulations as a management approach.

Strategic sourcing is the structured and collaborative process of critically analyzing an organization’s spending patterns to better leverage its purchasing power, reduce costs and improve overall performance.¹³²

In concept, strategic sourcing is neutral with respect to supplier size. The emphasis is on developing an optimum match between supplier and requirement and sharing sources, rather than getting a low price by bundling and volume buying. Strategic planning, market analysis, developing relationships, and sharing information about sources are precursors of cost-saving.¹³³ Strategic sourcing requires up-front costs, but part of the function of GSA’s FSSI is to achieve economies of scale in these activities. Natural advantages of small businesses—niche expertise, flexibility, responsiveness, and innovation—can be identified and highlighted in this process.

¹³¹ Public Law 111-240 § 1331.

¹³² FSSI website, <http://www.gsa.gov/portal/category/25623>.

¹³³ The strategic sourcing process includes:

- Conduct Opportunity Analysis,
- Profile Commodity,
- Conduct Supply Market Analysis,
- Develop Commodity Strategy,
- Develop & Implement Acquisition Strategy, and
- Manage Sourcing Performance.

(James Wright, *Strategic Sourcing and the Impact on Small Business Opportunity*, Army Materiel Command, n.d. <http://www.dtic.mil/ndia/2010nationalsmallbusiness/Wright.pdf>.)

An agency's strategy and implementation is probably the decisive factor in the impact of strategic sourcing on small-business procurement. On the one hand, "assist with socioeconomic goals" is one benefit for agencies touted by FSSI. On the other hand, development and maintenance with a large-scale supplier base (e.g., military procurement) may be part of the agency strategy. Offices that are weak on market research may revert to old habits. The potential for small-business procurement, however, is illustrated by FSSI's purchasing channel for Maintenance, Repair & Operations Supplies (MRO), where 11 of GSA's 12 blanket purchase agreements are with small businesses¹³⁴—almost a set-aside program unto itself.

Observations. Different approaches to procurement can make substantial differences to small-business procurement. If small-business procurement priorities can be aligned with cost and other management priorities, there will be natural incentives for small-business procurement. An emphasis on cutting costs and minimizing resource use through one-stop bulk buying will be a barrier to small-business procurement.

2. Deconsolidating Procurement

Eight six-digit industries (listed above) with average small-business shares of contractors, which account for 40.1 percent of procurement, have a collective small-business procurement rate of 11.8 percent. This translates into a shortfall of \$22.8 billion below the goaling level—an amount that has to be made up somewhere.

A low small-business procurement rate suggests great potential for expansion of small-business procurement in that industry.¹³⁵ The apparent potential may not be real. Some requirements are inherently large, and that characteristic may be a barrier to small business. Work on ships over 500 feet in length, for example, requires a large, "major" shipyard. Some constraints are institutional, the Department of Energy's national laboratories being an example. Some industries simply do not have very many competitive small businesses. Guided Missile and

¹³⁴ U.S. General Services Administration, *Maintenance, Repair & Operations Supplies (FSSI MRO)*, <http://www.gsa.gov/portal/content/187135>.

¹³⁵ A distinct problem—low participation rate of small (or subclass) businesses in the industry (which may or may not coincide with a low small-business procurement rate)—entails similar practical issues concerning market research.

Space Vehicle Manufacturing (336414) and Direct Health and Medical Insurance Carriers (524114) are examples.¹³⁶

Market Research. How much small-business procurement potential is available and where it is are open—and complex—questions. The most dollars are in industries with very low small-business procurement rates, but the most potential for expanding small-business procurement may lie in industries that are over the goal, particularly if agencies have slackened their effort and/or multiple task or delivery order contracts have made inroads. Fruitful opportunities must be identified, and market research is necessary to match small businesses with them.

Expanding opportunities for small business generally requires finding separable requirements in a procurement. At the margin, the boundaries between a single requirement, “the same or similar services or property,” and “2 or more procurement requirements”¹³⁷ are not always clear. In complex requirements, management control and accountability are likely to be issues, as well as technical feasibility of separation of requirements. Regulations on bundling directly address these issues. The statutory definition of “bundling,” however, is limited to requirements that were “previously provided or performed under separate smaller contracts.” The effect is ratchet-like. Unless “previously” is read as “ever,” requirements that have been consolidated in the most recent contract are allowed to remain bundled. The only enforcement is through review of justifications to bundle requirements in the current contract. There is little impetus to deconsolidate existing contract configurations. The narrow concept found in the definition of “bundling”—if we haven’t contracted for it before, it doesn’t count—also reflects a mindset that de-emphasizes market research.¹³⁸

¹³⁶ These two industries (which are not among the eight just cited because of their low small-business participation and availability) account for an additional 4.8 percent of procurement and have a combined small-business procurement rate of 0.26 percent—leaving an additional small-business procurement shortfall of \$5.5 billion.

¹³⁷ The distinction between the latter two is the statutory distinction between encouraged multiple-task or delivery-order contracts and impermissible bundling.

¹³⁸ This is illustrated by a bid protest that had nothing to do with bundling but used exactly the logic that would justify consolidation of new requirements. The case is clear because it is so extreme. A small business, pointing out that it and at least one other small business made products comparable to the solicited product, asked that the solicitation be set aside for small business. The acquisition office responded:

As stated at the pre-proposal conference, the MRC has never been purchased by DISC before. At this point in time, it has not been determined that 2 small businesses can manufacture this item. This MRC has never been purchased with the specifications that are required for *this* item in *this* solicitation. Solicitation will continue to be an unrestricted solicitation. [Emphasis added.]

The GAO upheld the protest, stating:

Inertia regarding market research is a substantial and ongoing barrier. OFPP’s 2002 *Contract Bundling* strategy (cited above) emphasized the necessity of market research before bundling could be justified (as current regulations do¹³⁹). A decade later, OFPP found it necessary to issue its “Myth Busting” memorandum to dispel misconceptions that impede communication with vendors and other market research. Probably the most fundamental “myth” was really an attitude:

Misconception—“Getting broad participation by many different vendors is too difficult; we’re better off dealing with the established companies we know.”

Fact—The government loses when we limit ourselves to the companies we already work with. Instead, we need to look for opportunities to increase competition and ensure that all vendors, including small businesses, get fair consideration.¹⁴⁰

A respondent to the 2012 PSC survey of acquisition officials commented on the “Myth Busting” memo and its context: “I have never seen so much common sense put down on paper. . . . [T]his is basic stuff. If we have to put this on paper, agencies must be doing stuff wrong.”¹⁴¹

Advocacy. Advocacy for small business is an important function in the small-business procurement process. As with several issues, the need for advocacy occurs with procurement in all industries, but it is most obvious in industries with high concentrations of procurement. The Office of Small and Disadvantaged Business Utilization (OSDBU) serves infrastructure within each agency to support small-business procurement, and SBA has Procurement Center

Based upon the facts underlying the determination as they were provided to our Office, we conclude that the contracting officer’s determination not to set aside the procurement was based on incomplete information, unsupported assertions regarding the complexity of the required MRCs, and insufficient efforts to ascertain small business capability to perform the contract.

(U.S. Government Accountability Office, *Safety Storage, Inc.*, B-280851, October 29, 1998.)

¹³⁹ As the relevant regulation puts it:

Requirement for market research. In addition to the requirements of paragraph (b)(2) of this section and before proceeding with an acquisition strategy that could lead to a contract containing bundled or substantially bundled requirements, an agency must conduct market research to determine whether bundling of the requirements is necessary and justified. During the market research phase, the acquisition team should consult with the applicable PCR (or if a PCR is not assigned to the procuring activity, the SBA Office of Government Contracting Area Office serving the area in which the buying activity is located).

(13 C.F.R. § 125.2(d)(3).

¹⁴⁰ Office of Federal Procurement Policy. “*Myth-Busting*”: *Addressing Misconceptions to Improve Communication with Industry during the Acquisition Process*, Memorandum for Chief Acquisition Officers, Senior Procurement Executives, Chief Information Officers, February 2, 2011, Myth #10.

¹⁴¹ Professional Services Council and Grant Thornton, *Acquisition Policy Survey* (2012), p. 24.

Representatives (PCRs) who are involved in the process. OFPP provided a summary description of these functions (although the details occasionally change):¹⁴²

The Small Business Act . . . requires each department and agency with contracting authority to establish an OSDBU, with reporting authority to the head of the agency. These offices promote contracting opportunities for small businesses. . . . OSDBUs are responsible for ensuring that small businesses have the maximum practicable opportunity to participate in the performance of federal contracts as both prime contractors and subcontractors. . . .

SBA assigns Procurement Center Representatives (PCRs) to major contracting offices to implement small business policies and programs. PCR responsibilities include: reviewing proposed acquisitions and recommending alternative procurement strategies; identifying qualified small business sources; reviewing subcontracting plans; conducting reviews of the contracting office to ensure compliance with small business policies; counseling small businesses; and sponsoring and participating in conferences and training designed to increase small business opportunities.¹⁴³

The responsibilities of the OSDBU and the PCR overlap somewhat. The PCR, however, is the principal initiator and point man for identifying separable requirements that can be split off as set-asides, and for market research. The PCR also is the only advocate independent of the agency. Acquisition staff members are supposed to perform the activities of small-business procurement, but if they do not, the PCR becomes, in some respects, the back-up to acquisition staff.

The 2013 SBA Field Staff Directory listed 61 PCR positions that cover 463 contracting offices.¹⁴⁴ Most PCRs serve multiple contracting offices in an agency (particularly DoD), and a few have more than one of the same kind of office (e.g., a Corps of Engineers district), but most serve diverse agencies with different types of contracting requirements. While some contracting offices are local to the PCR (particularly in the Washington, DC, area), most are in different locations, and some are in adjacent states, which limits direct contact. Nearly half (25) of the

¹⁴² The full version—13 CFR 125.2(b)—is in Appendix N.

¹⁴³ OFPP, *Contract Bundling*, p. 7.

¹⁴⁴ In 2002, 47 PCRs covered 255 contracting offices—about 30 percent fewer offices per PCR. (OFPP, *Contract Bundling*, p. 7.)

PCR positions are combined with one or more other functions—Commercial Market Representative, Certificate of Competency Specialist, and/or Small Business Size Determination Specialist. While there are some economies of scale in combining these functions, multiple responsibilities lessen the effort that can be devoted to any one of them. PCRs are spread thin: They do not have their own staff, although the agency OSDBU is supposed to assign a small-business technical advisor in each office to assist them.¹⁴⁵ As of May 2013, seven of the 61 PCR positions were vacant. When an updated Directory was posted (March 2014), one of the vacancies had been filled, five remained vacant, and one vacant position simply was no longer listed.¹⁴⁶

A PCR's authority comes from the possibility of appealing a decision. If the contracting officer disagrees with the PCR about

the suitability of a particular acquisition for a small business set-aside . . . the PCR may initiate an appeal to the head of the contracting activity. If the head of the contracting activity agrees with the contracting officer, SBA may appeal the matter to the secretary of the department or head of the agency.¹⁴⁷

Such an appeal can be time-consuming, however, and this is a disincentive for the PCR to take strong positions on individual procurements.

The PCR, along with the OSDBU Small Business Specialist (SBS), is best positioned to work in real time with acquisition staff. This is extremely important because planning and strategic decisions in which an agency would “structure its contracting requirements to facilitate competition by and among small business concerns” are often made early in the process.

Planning should begin at least *two years* before the end of an existing contract.

This period allows sufficient time to carry out the myriad requirements associated with the acquisition process.¹⁴⁸

¹⁴⁵ The “small business technical adviser shall be a full-time employee of the procuring activity and shall be well qualified, technically trained and familiar with the supplies or services purchased at the activity; and [his] principal duty shall be to assist the Administration procurement center representative in his duties and functions relating to sections 8 and 15 of this Act” (15 U.S.C. § 644(k)(8))

¹⁴⁶ SBA, *Government Field Staff Directory*, <http://www.sba.gov/content/government-contracting-field-staff-directory>.

¹⁴⁷ 13 CFR 125.2(b)(7).

¹⁴⁸ M. Brent Armstrong, “Twelve Steps to Better Government Contractor Selections,” *Contract Management*, May 2013, p. 38.

The lead time that regulations actually require for review by a PCR or OSDBU is very much shorter than two years. Although the regulations generally state “as early in the acquisition planning process as practicable,” the regulatory requirement is “not later than 30 days prior to the solicitation release” for such activities as:

- Coordination between the PCR and an SBS;
- Provision by the procuring agency to the PCR of a copy of a proposed acquisition strategy;
- Notice to incumbent contractors of intent to bundle; and
- Provision by the procuring activity to the PCR and the agency OSDBU of
 - ◆ The acquisition plan,
 - ◆ A copy of the proposed acquisition,
 - ◆ Any bundling information, including analysis and justification, and
 - ◆ “Any other relevant information.”¹⁴⁹

Such short lead times do not allow for PCR input before the structure of a solicitation has essentially been finalized. Even if the regulations said only “as early in the acquisition planning process as practicable,” limited resources raise serious doubts about how often a PCR can provide effective input early enough for a regulation still to be malleable.

Limited resources for timely involvement of small-business advocates and the resulting reliance on after-the-fact justifications are significant barriers to small-business procurement.

Observations. Procurement is far more concentrated within a few industries than most people realize. Some of the largest industries have very low procurement rates and average small-business contractor shares. Large contracts (and/or multiple contracts to the same contractor), rather than a dearth of small businesses, is a major factor in low small-business procurement rates.

Breaking out separable requirements from large contracts is the major potential source of additional small-business procurement. Because of the way bundling is defined—as new consolidation of formerly separate requirements—“unbundling” seems largely a matter of playing defense. Offense would entail re-examining consolidation in current contracts.

The PCR is the only advocate from outside an agency charged with working on contracts in real time to enhance small-business procurement. This critical activity is seriously degraded

¹⁴⁹ 13 CFR 125.2(b). See Appendix N.

by the limited number of positions and by factors such as diversity of agencies, geographic dispersion of contracting offices, reliance on agency personnel as the only support, responsibilities to carry out other functions related to small business, and vacancies.

After-the-fact reports and justifications of actions are not substitutes for the real-time review and participation that PCRs and OSDBUs are uniquely positioned to do. Yet reports and justifications of actions taken are the principal means of enforcement and accountability. Moreover, there is a major disconnect between the time frame suggested to do strategic planning that affects small-business procurement (two years) and the time frame that regulations require be given to OSDBUs and PCRs to react to documents (30 days).

D. Recommendations

Industry Detail and Market Research

Six-digit data cannot provide answers to questions such as why high concentrations of contracting occur or where fruitful opportunities for expanding small-business procurement lie. Market research—identification of small and subclass businesses with specific capabilities that match specific requirements, which is an integral part of small business procurement programs—is essential for effective expansion of small-business procurement.

Market research should be expanded and strongly supported. Failure to do adequate market research should have consequences for the acquisition staff involved.

Bundling

The statutory definition of “bundling” is a narrow one. This serves the purpose of clarifying exactly what is to be prevented, but it exempts some potentially important areas from consideration.

The operational concept of bundling should be expanded to include new types of procurement requirements, and it should authorize examination of consolidations of requirements that have previously passed (or eluded) bundling requirements.

Incentives

Procurement policy and practices create incentives for acquisition staff that can be a boost or a barrier to small business. Intended incentives are generally positive, but unintended changes in the incentive structure can easily be negative.

Congress and agencies should be mindful of the incentives created by new procurement policies and practices. Agencies, when adopting new practices, should be alert to opportunities to build in incentives with positive impacts on small business.

Procurement Center Representatives

After-the-fact reporting, justifications, and audits are not substitutes for real-time involvement, review, and advocacy—particularly early enough in the procurement process that a solicitation is still malleable. The PCR is the one actor in the process with this job description who is independent of the agency. This is an example (one of several) of a recommendation actually being in place—on paper. The resources, however, are not there.

The corps of PCRs should be substantially expanded, supplied with their own independent support staff and resources, and assigned to procurement offices for which they have relevant technical expertise.

PCRs should be authorized to reexamine consolidated procurements that have previously passed a bundling test.

Regulations should be revised to clarify that PCRs have involvement in the entire solicitation-development process, not just review of the final products.