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Examining the Effects of Set Aside Policies on Competition and Growth for Small and Mid-Sized Suppliers

6 September 2018

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Abstract

Small businesses benefit from set asides and other programs offered by the United States Small Business Administration, yet as they grow beyond federal size standards for small businesses they encounter a “benefit cliff.” Firms considering the transition from small to mid-sized can face a disincentive to grow because they will enter a federal procurement market dominated by large firms with extensive past performance. This study tracks nearly 1,000 federal suppliers and their contracts over a decade and illustrates the potential impact of small business policies on supplier competitiveness, program participation, and growth. The descriptive analysis shows that suppliers participated in small business set aside procurements, but relied less on them over time. Suppliers grew in terms of the number of agencies with which they contract and the product and services they provided. Yet many suppliers left the federal procurement market or had intermittent prime contract activity. Supplementary exploration suggests that less than 5% of small businesses grew to mid-sized while remaining an active supplier to federal agencies.

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Introduction

Federal acquisition policy distinguishes suppliers as either small or not small. Small businesses benefit from set asides and other programs offered by the U.S. Small Business Administration (SBA), whereas large companies have internal capacity, scale, and extensive past performance history to compete for federal procurements. Mid-sized suppliers are too big to qualify for set asides, yet often do not have parity with large firms. Anecdotal evidence of this disparity exits (perhaps best underscored by the work of trade associations such as the Association for Corporate Growth, Mid-tier Advocacy, GTSC-Lion's Den, and the development of the bi-partisan Congressional Caucus for Middle Market Growth). However, there is a dearth of empirical evidence on both the structural barriers that exist for middle market firms and the effects of their competitive disadvantage. Before we can understand challenges for mid-sized suppliers, first we need to examine the marketplace where small businesses can thrive: small business set aside procurements. Our study begins to clarify industry narratives by analyzing the contours of the competitive federal procurement market for small and mid-sized suppliers.

Inequities in the public acquisition market are not an insignificant concern. The scale and scope of federal acquisition is vast with over 5,000 different types of products procured (Brown, 2013), and over $438B in contracts obligated in 2015 (accounting for approximately 2.5% of GDP). The National Center for the Middle Market reports "middle market" firms account for one-third of private sector GDP and one-third of U.S. jobs. However, it is unclear whether mid-sized firms are correspondingly represented in the federal procurement market. A study by the Center for Strategic & International Studies (CSIS) suggests the answer may be no (Ellman, et al., 2011). CSIS found that mid-sized market share of federal professional services contracts is shrinking. Mid-sized contractors claimed 40% of the total value of federal professional services contracts in 1995, but only 30% in 2009. During the same time period, large contractors increased their market share from 41% to 48% and small business market share increased from 19% to 22%.

Understanding the barriers to competition, purported disparities, and structural policy effects that can impede middle market firms' ability to compete for federal contracts will in turn help us to understand their ability to capture market share, grow business, and deliver value to federal agencies.

This study examines the federal small business set aside program and assesses the impact of small business set asides on supplier competitiveness, program participation, and firm growth. Our study is based on a random sample of nearly 1,000 firms with a small business set aside prime contract action in 2005. We included firms with contracts for products and services, which vary in complexity from simple product procurements to more complex services contracts (e.g., information technology systems). We followed these firms for a decade in order to better understand their contracts and the operating environment for small and mid-sized suppliers.

Our paper proceeds as follows. First, we provide context for the study by describing the federal policy environment for small and mid-sized suppliers. Next, we address our data and methodological approach. We share our analysis and discuss policy implications and opportunities for future research. We suspect that firms that successfully transition out of the small business marketplace have unique ways of overcoming the "benefit cliff" they encounter as they grow as they operated a sheltered small business market, and this research lays the foundation for further study of these dynamics. We consider whether current policies governing procurement hamper mid-sized firm competitiveness in the federal procurement market and dampen U.S. economic growth.

Set Aside Policies in Federal Procurement

The first substantive guidance that directed to federal agencies to contract with small businesses originated in the U.S. Senate in 1940 with the Special Committee to Study and Survey Problems of Small Business Enterprises, and in the U.S. House of Representatives in 1941 with the Select Committee on Small Business. The Congressional committees were created to protect the interests of small business owners, recognizing the need to support a thriving small business community for innovation, economic growth, and national security. The Small Business Act of 1953 explicitly stated government prime contracts and subcontracts should be awarded to small business and later the Small Business Act of 1958 created the SBA, an independent agency within the executive branch. Permanent committees were later established by both chambers: The Congressional Committee on Small Business and the Senate Committee on Small Business and Entrepreneurship (Small Business Committee, nd; Senate Committee on Small Business & Entrepreneurship, nd; Department of Defense Office of Small Business Programs, nd).

The policy goals for small businesses in federal procurement are multifaceted.[1] The initiating legislation created a competitive marketplace for small businesses to participate in federal procurement and win government awards; small business set aside procurements meet this policy objective. Government procurements are also required to allocate a percentage of all awards to small businesses. Firms bidding for these set asides must adhere to strict regulations to

[1] SBA serves interests of small business beyond those discussed here relating to federal procurement. For example, the SBA has developed several financing and loan tools and set aside procurement policies to support small business growth. One of the most popular programs is the 7(a) Loan Guarantee which allows small businesses that are otherwise incapable of obtaining private sector financing access to funding up to $5 million. These funds may be used for a wide range of applications including the purchase or repair of capital, expansion or building of structures, and refinancing existing debt (Murray, 2013). A similar program, the 504 Certified Development Company loan, offers long-term fixed-rate financing specifically for the purchase of fixed assets for expansion or modernization (U.S. Small Business Administration, n.d.). Other innovative solutions such as the Small Business Investment Company (SBIC) and Surety Bond Guarantee programs offer growth-phase firms access to investment capital and bonding that they would otherwise be too small to acquire.

qualify as “small business concerns.” Although there are many exceptions and stipulations delineated in the Federal Acquisition Regulations (FAR) that determine the size of firms, the two primary criteria are the 12-month average number of employees and three-year average receipts. The Code of Federal Regulations (CFR) requires the SBA to calculate these Size Standards for each line of business specified in the North American Industry Classification System (NAICS). For example, according to the current size standards, an iron and steel forging company (NAICS 332111) may be considered small if they have an average of 750 employees or less. A management consulting firm (NAICS 541611) may be classified as small if they have a 3-year average of no greater than $15 million in revenue. In response to concerns that the SBA size standards failed to adapt to the changing economy, Congress passed the Jobs Act in 2010 requiring SBA to review all size standards and make necessary adjustments to reflect market conditions at least once every five years (U.S. Small Business Administration, 2017).

The SBA also establishes acquisition goals for federal agencies. Government-wide, 23% of the contract value of prime contracts is set aside for small businesses awards. There are goals within that subset, such as five percent of prime and subcontracts are to be awarded to woman-owned small businesses, five percent of prime and subcontracts are to be awarded to small disadvantaged businesses, among others. Agencies also biennially negotiate their targets with the SBA in order to meet government-wide goals. In FY17, goals ranged from 10% at the Department of Energy to 73% at SBA. Additionally, federal agencies have annual goals for subcontracts. For example, the Department of Defense’s (DOD) prime contract goal is 22% in FY17, but the subcontracting goal is 34%.

One of the other key policy objectives of the Small Business Act is to promote small business in order to foster economic growth. Yet as suppliers grow towards their NAICS thresholds, they often encounter a “benefit cliff” that can disincentivize growth, counter to this goal. While the SBA might support economic growth among the smallest of small businesses (see footnote 1), federal acquisition policy is arguably less effective in supporting economic growth.

Public management research sheds light on a different dynamic at work in set aside procurements. One of the underlying tenets of contracting for goods and services, is to harness competitive force of market. As with most government policies, unintended adverse effects can result in pursuit of overcoming market failures (Vining & Weimer, 2005). In this case, set aside programs restrict competition, contribute to weakly competitive procurements, and thereby limit the range of cost, quality, and delivery options for goods and services procured under said programs (Brown, 2007; Girth, Hefetz, Johnston & Warner, 2012). When markets are constrained, purchasers have fewer choices to balance different, and sometimes competing, purchasing goals (Brown, Potoski, & Van Slyke, 2013; Johnston & Girth, 2012). Taken together, these conflicting objectives between efficiency, equity, and effectiveness illustrate the intricacies of multifaceted policy interventions such as the small business set aside program.

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Methods and Data

Our purpose is to understand the contours of the small business set aside marketplace, and we do this through descriptively analyzing federal contracts. We examined small business behavior by gathering data on 977[2] suppliers that had a small business set aside contract in 2005 (i.e., they have at least one prime contract action associated with a small business set aside contract). Data was drawn from the Federal Procurement Data System-Next Generation (FPDS). FPDS is a repository of all non-classified prime contract activity with any action exceeding $3,000 in value for federal agencies. The FAR requires contract officers to enter contract information into FPDS-NG and update as required. Contract actions include the individual records created when a contract is initiated and subsequently modified. We stratified the sample such that 60% of contracts are Department of Defense (DOD) contracts to mirror federal spending. The sample included firms with contracts for products and services varying in complexity, from simple product procurements to more complex services contracts. The unit of analysis was firm-year and contracts data from FPDS-NG was aggregated to account for contract activity for each fiscal year.

Data on firm attributes was procured from Dun & Bradstreet. This data is reported annually and appended to FPDS data to create our dataset. We also conducted content analysis and cross-referenced data with the System for Award Management (SAM), Dynamic Small Business Search (DSBS) database, and open source material.

[2] We initially extracted a sample of 1,025 suppliers. In some cases, contract actions reported in FPDS-NG were missing key data elements, such as product or service code, principal NAICS code, or contracting agency; this reduced our sample to 977 suppliers

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Analysis

Descriptive Analysis

This descriptive study presents analysis on 977 federal suppliers over a 10-year period from 2005-2014. Data from FPDS-NG and Dun & Bradstreet reveal contracting patterns and supplier activity broken out by industry. Supplemental qualitative analysis was conducted to assess supplier growth.

Although we have 9,770 observations (977 firms and 10 years of contracts data), we only have 5,995 observations in the data set with prime contract activity.[3] Table 1 contains descriptive statistics of variables in our dataset.

Table 1. Descriptive Attributes

Variable	*Source*	*25th percentile*	*50th percentile*	*75th percentile*	*Mean*	*Std. Dev*	*Range*
Percent set asides	FPDS	0.01	0.43	1	0.47	0.41	0-1
Agency diversity	FPDS	1	1	2	2.31	3.24	1-44
PSC diversity	FPDS	1	2	3	2.75	3.12	1-39
Manufacturing	DB	0	0	0	0.21	0.40	0-1
Transportation	DB	0	0	0	0.05	0.22	0-1
Wholesale trade	DB	0	0	0	0.18	0.38	0-1
Retail trade	DB	0	0	0	0.05	0.22	0-1
Finance	DB	0	0	0	0.02	0.13	0-1
Construction	DB	0	0	0	0.10	0.30	0-1
Public administration	DB	0	0	0	0.00	0.02	0-1
Services	DB	0	0	1	0.39	0.49	0-1
Woman-owned	DB	0	0	0	0.23	0.43	0-1
Minority-owned	DB	0	0	0	0.16	0.37	0-1

- Percent set asides: We define contracts as small business set aside contracts to include set aside categories targeting small businesses, such as woman-owned small business, 8a, service disabled veteran owned small business, and the like. The variable measures the percent of contract actions

[3] As table 1 illustrates, we only have 303 suppliers with contract activity in all 10 years. This means 3,030 observations for those suppliers as the unit of analysis is firm-year. The remaining observations represent varying scenarios from table 1 (one supplier might only have contracts data for 2005, another might have contracts data for every year except 2014). This is why our total observations of suppliers with contracts data reduces to 5,995.

specified as small business set asides compared to total contract actions in a given year. We see that an average of 43% of a supplier's portfolio are related to small business set aside awards. The distribution of this variable is like a hockey stick – at the 75th percentile, set asides are 100% of supplier portfolios.

- Agency diversity: We calculate the number of agencies (at the enterprise level, e.g., Agriculture, DOD) with which a supplier has contract actions recorded for a given year. This shows that most small business suppliers serve one or two distinct federal agencies.
- Product and service code (PSC) diversity: We track the number of product and service codes affiliated with contract actions for each year. This value represents the number of different PSCs associated with all contract actions for a supplier in a given year. PSCs are aggregated to the first two digits (e.g., "51 Hand Tools" or "W Lease/Rental of Equipment"). Most firms operate in two NAICS categories.
- Lines of business/Standard Industrial Classification (SIC). Primary SIC is developed by the Federal government and is reported to Dun & Bradstreet. The first two digits of a four-digit code rolls up to one of 11 categories. Seven of the 11 categories are in this sample: services, manufacturing, transportation and public utilities, retail trade, wholesale trade, finance, insurance and real estate, and construction. About 40% of the firms in this sample identify their primary SIC as services.
- Ownership. Approximately 23% of the observations are attributed to woman-owned suppliers. Approximately 16% of the observations are attributed to minority-owned suppliers.

Contracting Patterns

As shown in table 2, about one-third of suppliers consistently maintained contracts with federal clients in every year studied. The remaining firms had irregular activity (e.g., contract actions 2005-2006, no contract actions 2007-2009, and contract actions 2010-2014). In some cases, suppliers were only inactive for one year. In other cases, suppliers had two or more continuous years of inactivity, which indicates the firm either discontinued serving federal customers, did not survive, or solely relied on subcontracts.

Table 2. Suppliers in the federal procurement market (FY 2005-2014)

Description of supplier activity	*Number of suppliers*
Contract activity for all years	303
One year with no contract activity	71
Two or more continuous years with no contract activity	312
Irregular contract activity	291
Total	977

Only about half firms with federal contracts in 2005 had contracts in 2014, as shown in table 3. For those that remain, they had nearly twice as much contract activity in 2014 than 2005. Suppliers that remained active in the federal procurement market relied less on set aside contracts over time. They expanded the number of PSCs they operated in, and increased the number of agencies they contracted with. Taken together, this is indicative of growth among this subset of suppliers. Of the 424 suppliers with prime contract actions in 2014, 108 had no small business set aside contract actions in 2014. However, this does not mean that they are no longer small businesses.

Table 3. Supplier Contract Attributes

Attributes	*Value in 2005*	*Value in 2014*
Firms with prime contract action	914	424
Number of prime contract actions (mean)	21	40
Percent of set aside prime contract actions (mean)	68%	44%
Diversity in number of PSCs (mean)	2.32	2.96
Diversity in number of agency customers (mean)	1.67	2.78

Supplier Activity by Industry

Figure 1 provides the supplier industry classification of the suppliers in the sample. Over one-third of the suppliers designated services as their primary industry. Manufacturing and wholesale trade were the next most common. Given the low number of suppliers in the sample designating finance as its primary industry, any results regarding the finance industry should be taken with caution.

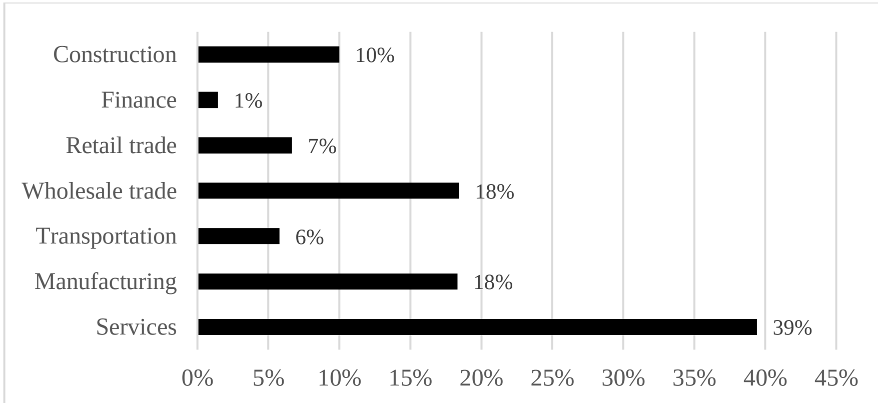

Figure 1. Supplier Primary Industry Classification (FY 2005)

Over time, suppliers increased the number of agencies with which they contract, indicating increased breadth. As figure 2 illustrates, this is true across every industry. The largest increases were in retail trade and services. For this analysis, agencies were captured at the enterprise level (e.g., Agriculture, Defense, etc.).

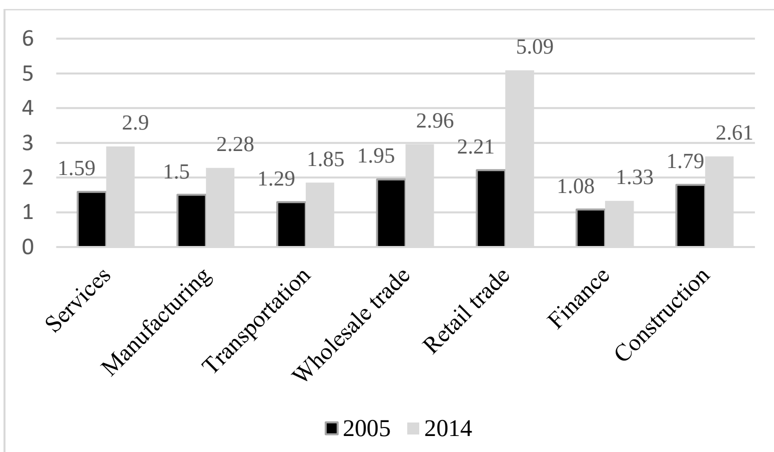

Figure 2. Number of Agencies (FY 2005-2014)

Suppliers expanded the number of PSCs they operated in signifying that across industries, suppliers grew in their lines of business and offerings to federal clients. Figure 3 shows that retail trade and wholesale trade had the largest gains. For this analysis, PSCs were captured at a high level (e.g., the first 2-digit or letter-level).

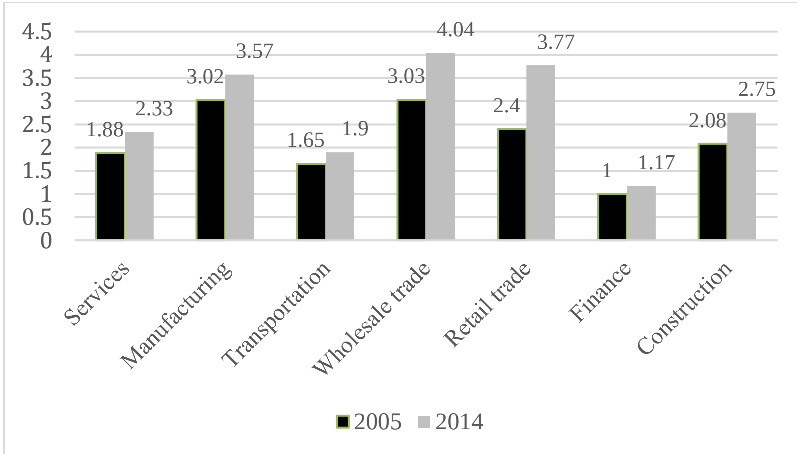

Figure 3. **Number of Product and Service Codes (FY 2005-2014)**

Small businesses also relied less on set aside contracts as they continued to win federal contracts. Figure 4 illustrates the industry breakdown of the percent of contract actions associated with small business set asides from 2005 to 2014. The lowest overall decline in use of set aside contracts was among construction suppliers.

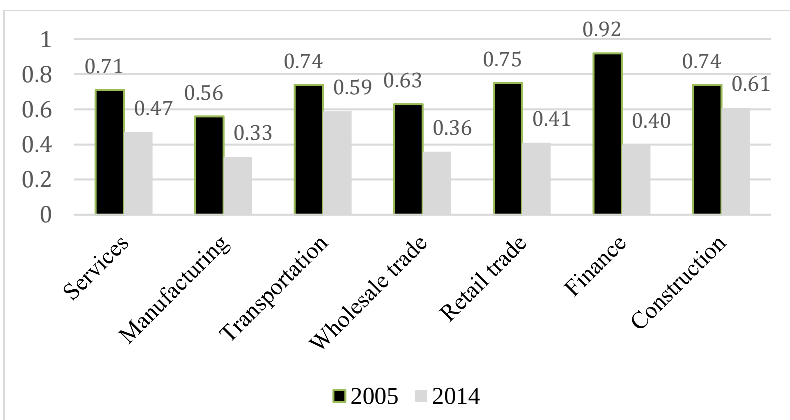

Figure 4. **Percent Small Business Set Asides (FY 2005-2014)**

Suppliers had more contract activity over time. Figure 5 shows the number of contract actions by industry from 2005 to 2014. The biggest increase was in services, manufacturing and retail trade.

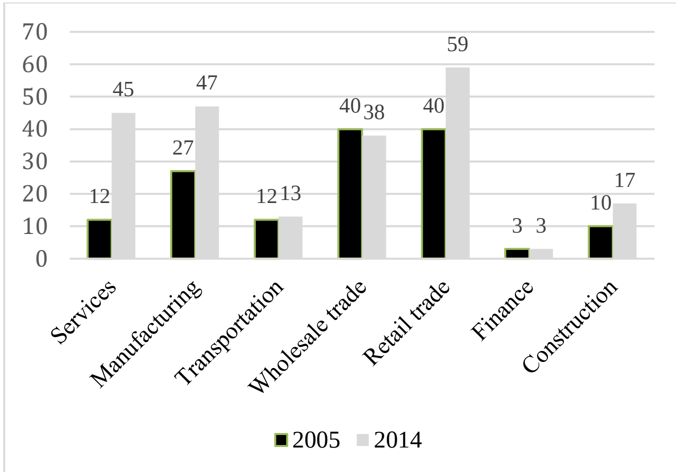

Figure 5. Number of Contract Actions (FY 2005-2014)

Supplier growth

The intent of the study is to determine supplier growth into the middle market, however, it was not possible to derive this information from FPDS-NG or Dun & Bradstreet data and so an alternative approach was pursued. An estimate of firm size was created by manually searching supplier records in the System for Award Management (SAM). It is important to note that historical data of suppliers' representations and certifications is not available. Thus, FY 2018 data is used to provide an estimate of supplier growth. Open source records were also searched to determine acquisition activity.

Figure 6 shows the present size status of the suppliers in the sample. The inquiry shows that approximately 4% of suppliers are “other than small.” Of those suppliers, half grew due to acquisition (i.e. they were acquired or acquired another firm). This number is likely underestimated because supplier size is only captured if the business continues to supply the federal government and completes their vendor registration in SAM. Approximately 43% are confirmed small. A significant number of firms – over half in the study – are not currently active in SAM, implying they are no longer supplying the government. A subset of these firms may be out of business, while others remain in business but no longer have federal clients and open source searches were inconclusive. Approximately 3% are confirmed closed.

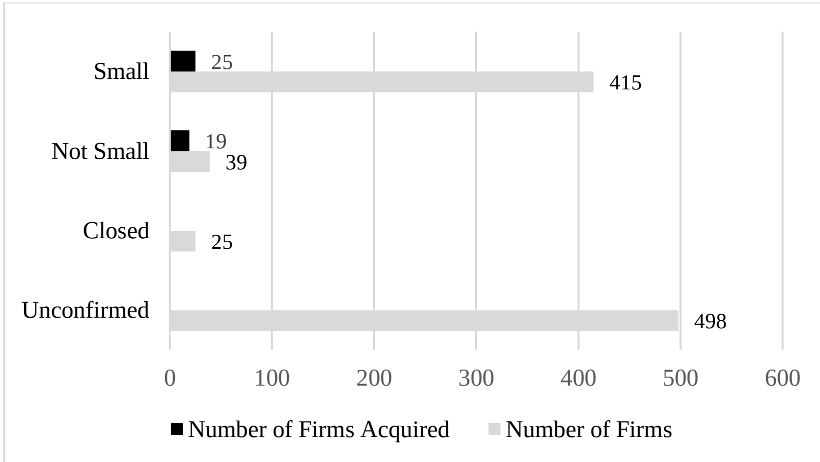

Figure 6. Supplier Growth (FY 2018)

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Discussion

Our interest in this research lies in the design and implementation of the small business set aside program. Our analysis shows the tension between programmatic goals that established the SBA and set aside programs: economic growth versus equitable access. In this section, we explore the implications of these tensions in practice. We discuss the implications of our descriptive analysis and present future research opportunities in light of our exploratory findings. We raise data limitations encountered with this study, which has bearing on future work, and explore approaches to research design in light of data constraints.

The vast majority of suppliers in our sample shelter in the small business set aside market. They fail to grow beyond the sales or employee thresholds in the product or service areas for which they have self-certified. In most cases, firms in our sample elect to stay small. These suppliers recognize the value of the constrained federal market established for small businesses. Their clients also value their small business status, allowing for more desirable procurements as they help to achieve the agency's small business goals. In other cases, we suspect small businesses are unable to harness the resources, whether financial or managerial, to grow. In yet other instances, prior study finds that firms respond to undesirable consequences resulting from growth. Despite evidence to the contrary, firms fear increased size can increase vulnerability to survive crisis (Davidsson, et al., 2006).

Our study shows that small business suppliers have intermittent prime contract activity. This finding warrants additional exploration for its impact on both the federal acquisition supply chain, but also small business growth and survival. Our data suggests that about half of the firms with small business contracts in 2005 no longer supply federal clients in 2014. This indicates that these small businesses did not win prime contracts and may serve as subcontractors to other suppliers, went out of business, or elected to supply other industries (e.g., state, local, and/or business-to-business).

Among the small businesses with prime contracts, small businesses rely less on set asides over time, indicating these suppliers are able to win contracts in a competitive market. However, the way in which agency small business goals are captured, by contract officer designation of the business as small in FPDS-NG, creates incentives to award contracts to small businesses.

Several policy implications begin to form in light of this exploratory research, including policy priorities to support lasting transition to the middle market. Policy options might include modified size standards aimed to benefit mid-sized firms (particularly those at the lower threshold of the middle market). One concern with simply raising current size standards, or increasing the number of years in the rolling average to determine qualification, is that action fails to addresses underlying issues for emerging small businesses, and is a temporary remedy for only those firms on the edge of mid-sized.

There are also other ways the federal government could support mid-sized suppliers in that are neither large nor small. Agencies increasingly rely on federal schedules and multi-award vehicles. Creating a unique vehicle for mid-sized suppliers is one alternative advanced by trade associations supporting mid-tier suppliers. Another policy option is to create subcontracting benefits for prime contractors that utilize mid-sized suppliers. That is, rewarding proposals with mid-tier suppliers on the subcontracting team, or compelling large firms to diversity their teams by including mid-sized suppliers in addition to meeting existing small business requirements.

While there may be little drive among policymakers or administrators to create additional regulation, there appears to be a desire to address some of the structural challenges faced by mid-tier suppliers evidenced by recent congressional hearings (U.S. Small Business Committee, 2017). Even with political support, we conceive of a number of roadblocks to these alternatives. First, contract officers are already stretched thin, and policies to support the middle market would likely increase regulatory burden on acquisition staff. Second, large firms benefit from status quo policies and would likely mobilize and challenge any regulatory changes that strengthens the middle market at the expense of the large suppliers. Third, it is unclear where the line should be drawn between emerging small business at the margins of the middle market, and larger mid-tier suppliers. Who should make that determination, how, and where is the appropriate regulatory home for middle market suppliers?

More broadly, the underlying issue for policymakers to consider is simply the way in which procurement policy and regulation recognize federal suppliers as either “small business” or “not small business.” By ignoring the middle, the government may be losing an opportunity to secure value by not actively seeking contracts with mid-sized firms. It is well understood that small businesses are higher risk suppliers. Unlike large firms, their internal processes are immature and resource shocks can have profound effects on a small enterprise and their clients. Large firms largely mitigate that risk, but can be costly. Mid-sized firms can be well suited to provide value at lower risk than small firms and lower cost than large. In any case, federal agencies are likely missing opportunities to secure value by treating all firms that are not small as large and not incentivizing contracting with mid-sized suppliers.

Future Research

The purpose of an exploratory study is to describe the current state and then propose further research to advance knowledge. With this in mind, we propose a number of possible avenues for future study. To begin, small and mid-tier businesses would benefit from understanding the success factors for the unusual firms in our study that started as small businesses, and then successfully grew beyond their size standard and into the middle market. A qualitative study designed to solicit interviews from principals of the firms we identified would shed light on success strategies.

Further, the initial intent of our research was to determine growth factors for suppliers successfully transitioning to the middle market, yet we have been unable to answer this research question due to inadequate data specification in FPDS and Dun & Bradstreet. Extensive primary data collection is needed to address this shortcoming. One approach to this is to leverage the qualitative findings from the aforementioned principal interviews to develop a survey instrument for wider distribution to small and mid-sized suppliers.

Next, we designed our study to gather contracts data across a wide range of contracts and did not constrain our sampling procedure to a specific NAICS in order to replicate the procurement environment. Replicating and then extending this study by analyzing a sampling of contracts within a single NAICS, to include the full range of suppliers (small and not small) would provide a different perspective on the supplier dynamics in the federal procurement market. Although this process would limit generalizability, this would help to shed light on the competitive landscape for all suppliers within a controlled category.

Finally, our analysis of contract patterns showed that one-third of businesses consistently contract with federal agencies. While some firms went out of business during the time period studied, others no longer participate in the federal marketplace. Future study on the reasons for the lack of continued participation could help understand barriers to federal contracting, particularly among firms with a diverse client base.

Conclusion

In practice, acquisition officials are asked to deliver contracts that meet best value, low cost, or other performance objectives, and to meet broader political objectives that can affect (constrain) eligible suppliers. Public sector contracts are not simply a tool to increase efficiency; they can also serve to promote other public values. Procurement policies that target specialized groups, such as small businesses, minority-owned, or women-owned firms, are designed to promote equity and representativeness. In short, public procurement is a way in which governments can promote social policy goals, such as increased opportunity for underrepresented groups (McCrudden, 2004). It is this tension amongst competing values that motivates our interest in this study of small business set asides.

Our research represents a first step in capturing the structural dynamics involved in the design, implementation, and evaluation of competitive practices in federal agencies aimed at promoting small business participation and growth. For small and mid-sized suppliers, the analysis shows the market dynamics do not favor growth. Further analysis is needed to determine success factors for outlying suppliers that succeed in the middle market.

The results also have implications for policy makers. The Small Business Act has succeeded in carving out a competitive space for small businesses seeking federal procurements. The Small Business Administration's policies support growth among the smallest of firms, but appear to fall short in one of the Small Business Act's other goals, which is to encourage economic growth. There is yet another dynamic that should concern policymakers and administrations. That is, if further analysis confirms that middle market firms are, on balance, unable to compete in the federal procurement market, then agencies are likely missing critical opportunities to secure value.

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